A COMPUTER TRAINING INTERVENTION ON SCHOOL COUNSELORS' SELF-EFFICACY, SKILLS, KNOWLEDGE, AND ATTITUDES

By

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A computer training intervention for certified school counselors in elementary, middle, and high schools was evaluated for its effects on general self-efficacy, as well as computer skills, knowledge, and attitudes. The intervention was delivered to 72 school counselors working in public schools in Orlando, Florida.

The training workshop served as the treatment intervention to teach counselors how to implement computer skills, such as using electronic mail, searching the Internet, developing Power Point presentations, and creating Web page designs. Further, this intervention attempted to improve attitudes regarding computer technology and the self-efficacy of school counselors.

Hypotheses were tested based on data derived from a pretest-posttest control group design. A quasi-experimental design was used with pre and post measures of self-efficacy (The Self-efficacy Scale-General subscale), computer knowledge and skills (The

School Counselor Computer Competency Scale), and attitudes (Attitudes Toward Computer Technologies).

Subjects participated in one of two experimental groups. One (E1) was a treatment group and participants took part in a one-day workshop and the second (E2) served as the control group.

The primary analysis conducted to determine if a difference existed between the treatment and control groups used a 2 (Group) x 5 (Factors) MANOVA utilizing the Wilks Lambda test statistic. A criterion *p*-value of .05 was used to determine the overall significance of the test. Given the significant multivariate test, each of the dependent variables was analyzed using a univariate t-test to determine on which of these variables the groups significantly differed.

Results indicated that the school counseling training intervention showed significant differences in computer knowledge, skills, and comfort anxiety levels after participants experienced the treatment intervention. However, it was not effective in changing school counselors' perception of self-efficacy or perceptions of the usefulness of computer technologies.

The results from this study play a part in adding information to the limited data available on school counselors and the impact of computer technology. Technology is constantly changing and there are new computer advances every year. The key is to find practical ways for school counselors to utilize these advancements to create more efficient and effective school guidance programs.

CHAPTER 1
INTRODUCTION

The development of the first microcomputers twenty-five years ago was the catalyst for an increase of computer technology in schools (Gaushell, 1984). This increase allowed teachers to present information to students in different ways. School counselors also used computers to assist them in their work.

According to Hardesty and Utesch (1994) elementary and secondary school counselors first began using computer technology for record keeping, printing guidelines, maintaining grades, daily attendance, and calendar events. Technology training for educators focused on using word processors, storing information on computer disks, and some desktop publishing. In the past school counselors utilized this technology to access student files, create a school-wide scheduling system, and generate handouts and memos for faculty and staff. However, advances in computer technology have led to the development of new tools and multimedia programs that are often not implemented into school guidance programs.

Internet access in public elementary and secondary schools has increased. For example, 30% of elementary schools and 49% of secondary schools had Internet access in 1994. That is compared to 88% of elementary and 94% of secondary schools in 1998. There are now more instructional classrooms connected to the Internet. Elementary schools went from 3% of their classrooms being Internet-ready in 1994 to 51% of their classrooms in 1998. This computer technology continues to grow throughout school districts and within individual schools ("The Condition of Education," 1999).

In the school counseling profession technology can play a part in retrieving and disseminating information. For instance, electronic mail provides an expedient and efficient way of posing questions, requesting information, and responding. McLellan (1999) recognized that e-mail could be used to assist students and parents by providing direct channels of communication. Web sites can also disseminate information to others in a quick and effective manner. For example, a school's Web site might be linked to the school counselor's Web page. This Web page could provide users with a guidance master calendar with dates of standardized tests and college admission deadlines. This type of computer technology also promotes public awareness about the role and functions of a school counselor, including counselor interventions and opportunities for parent and community involvement.

Training in computer technology can also assist school counselors in exploring colleges and careers with students and their families. Considerable information about financial aid, scholarships, loans, and grants for colleges is now available via the Internet. Counselors also need to stay current with the latest occupational information and career trends. They can do this by accessing different databases on the Internet, such as the Web site featuring the Bureau of Labor Statistics or the online version of the Occupational Outlook Handbook.

Electronic newsletters and online counseling journals can provide school counselors with information from across the nation. This technology empowers counselors to tap into current research and new techniques that are presented in journals on the Internet. E-mail, listserves, and Web sites not only assist in disseminating and retrieving information, but also can enable counselors to network with colleagues (McLellan, 1999; Myrick, 1997; Van Horn & Myrick, 2001). Some examples may include developing online mentoring programs, sharing experiences and recommendations about counseling resources, and providing online legislative information to colleagues. School counselors that are trained in utilizing computer technology can combine visual graphics with sound and hands-on activities as part of counseling interventions. The integration of applied technology and media-enhanced instruction can help to increase counselor rapport with students, engage students, and increase student interaction (Caudill, 1998; Cornell, 1999).

Simply providing technology is not enough. Users also need to feel comfortable and capable in their abilities to use technology before they can take steps to implementing it into a program (Bray, 1999). As computer technology opportunities increase, it is vital to focus on the importance of effective training methods to equip users with adequate computer skills (Chou & Wang, 1999).

Theoretical Perspective

In order for school counselors to embrace computer technology, they must have positive attitudes and a high self-efficacy in using technology (Delcourt & Kinzie, 1993). The theoretical framework in this study focuses on how people can alter their perceptions and attitudes towards certain tasks. In this study the people are school counselors and the task is implementing computer technology into a comprehensive guidance program using email, Internet, Power Point, and Web pages.

Self-efficacy theory was first introduced by Bandura (1977) and it originally centered on a specific type of expectancy and one's beliefs about performing that particular behavior or outcome. The theory of self-efficacy has been expanded and can be defined as " people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances" (Bandura, 1986, p.391). Self-efficacy focuses on a person's self-capability and affects a person's choice of activities, effort, and determination (Schunk, 1995). Olivier and Shapiro (1993) point out that self-efficacy has a distinct difference from self-esteem in that the former focuses on self-capability, while the latter focuses on self-worth. Self-efficacy is relevant to student learning, motivation, and achievement. According to Schunk (1995), students who are confident in their abilities to accomplish a task are more persistent, hard working, and maintain more determination in completing that task, especially when encountering a problem.

Performance accomplishments, vicarious experiences, and types of persuasion may influence how students view their own capabilities (Schunk, 1995). Performance experiences involve a success or failure and greatly influence an individual's self-efficacy (Bandura, 1977). A person who shares a success performing a particular task will increase self-efficacy expectancy for that task; however, if a person fails at that skill, then self-efficacy expectancy decreases for that skill.

Vicarious learning can also affect self-efficacy expectations because individuals observe what others are doing and reflect on if they are capable of doing that same behavior (Maddux, 1995). For example, modeling and imitation are two ways that an individual may feel more competent in performing a task. According to Schunk (1995), there are some aspects that may influence the effects of vicarious learning such as the observer's belief of likeness between the model and himself/herself, the commonality of challenges faced by the model and observer, and the number and range of models available.

Computer self-efficacy is a term referring to an individual's belief of utilizing computers. Bandura's theory of self-efficacy provides insight and a basis for understanding the behavior of individuals with regard to acceptance or rejection of technology (Olivier & Shapiro, 1993). How an individual feels about a previous experience can affect beliefs about a future performance. For instance, individuals who see themselves to be effective in using computers will predict positive computer experiences. However, those individuals who view themselves as ineffective using computers will anticipate negative computer experiences in the future (Olivier & Shapiro, 1993).

Instructional studies support the idea that teaching learners how to use strategies effectively can raise their self-efficacy and achievement (Schunk, 1995). Strategies need to be perceived as useful in order for learners to feel motivated. If a person can see the benefits in a strategy, then that person will be more willing to apply that strategy (Schunk, 1995). Anderson and Reed (1998) point out that due to differences in learners, instructional training and strategies also need to address computer technology in ways that include all learning styles. Learning style can be thought of as the ideal way a person acquires and uses information in a learning environment (Chou & Wang, 1999). Workshops that incorporate multimedia effects, such as screen projection devices, computers, and video, can help adult learners and improve the effectiveness of trainings by incorporating visuals and enhancing the learning process. Elements of computer workshops that enable the learner to access information in different ways include written instructions, lecture, visual demonstrations, hands-on experiences, and practice time (Ladd, 1986).

Statement of the Problem

The challenge for educators that comes from increased computer technology in the schools is the implementation of that technology. Trilling and Hood (1999) point out that even though billions of dollars are being utilized on connecting schools with computer technology, little is being spent on training and teaching effective uses of electronic information and knowledge tools. Owen and Weikel (1999) state "that there is little doubt that the computer can represent a powerful tool for performing many counseling-related tasks, but little is known about the extent to which school counselors are using this tool in their work" (p. 179). With a lack of training and guidance, school counselors are limited in the ways they can utilize computers into their guidance programs.

Need for the Study

School counselors have more opportunities to expand their programs and to reach more parents, students, and faculty by utilizing computer technology. Electronic mail, Internet, Power Point, and Web pages are guidance tools that are often missing from school counseling programs. These computer-related tools enable school counselors to implement additional strategies to improve developmental guidance programs. For instance, this computer technology can assist school counselors with promoting the goals of a guidance program, retrieving and disseminating information, and finding support and network systems within the profession.

When approached about the possibilities regarding computer utilization, many school counselors are curious and interested; however they are often concerned about the lack of training opportunities, lack of available information on computer literacy, and lack of district financial help (D'Andrea, 1995; Hardesty & Utesch, 1994; Myrick & Sabella, 1995). School districts and county programs that do offer training in computer literacy are geared for all educators and do not cover specific interventions or strategies that can benefit school guidance programs. They are available for teaching specific computer skill use, such as how to operate e-mail or the Internet, but tend to ignore how these skills can be implemented to help teachers, students, and parents. Much of computer information and training is provided through manuals or books that are limited. Workshops can get caught up with only presenting concepts to the audience instead of providing time to apply those concepts for real work situations (Ladd, 1986).

Simulations, demonstrations, group interactions, and practice time allow workshop attendees to learn through hands-on experiences. This type of training is needed and would enable school counselors to actually experience creating Power Point presentations, Web pages and searches utilizing the Internet. Due to limited training opportunities and lack of knowledge about applying technology, school counselors are in need of computer technology workshops. This type of training can provide counselors with the knowledge, skills, and confidence necessary for implementing current technologies into their guidance programs to help students and families.

Purpose of the Study

The purpose of this study is to examine the effects of a computer training intervention on a school counselor's self-efficacy, along with counselor knowledge, skills, and attitude regarding computer technology. More specifically, school counselors serving grade levels K-12 will attend professional workshops to learn how applied computer technology can be used to engage students and others in their work. The effects of the workshops will be measured in terms of increased computer knowledge and skills, counselor attitudes towards computers, and general self-efficacy.

Research Questions

The following research questions will be investigated in this study.

1. Will counselors who attend a professional workshop about computer technology apply the skills learned in their schools?
2. Will counselors who attend the workshop increase their knowledge of computer technology?
3. Will counselor attitude towards applied computer technology change as a result of the workshop?
4. Will counselor's level of self-efficacy change after attending a workshop regarding the use of computer technology?

Definition of Terms

The following terms can be useful in understanding the nature of this study.

Self-efficacy is a sense of personal control

Computer Self-efficacy refers to a person's perceptions and capabilities of applying computer technology

Computer knowledge refers to the understanding a person has in regard to computers and the ways they can be used.

Computer skills refers to the ability of a person to perform tasks on a personal computer to gather and explore information through various measures.

Computer attitude refers to the beliefs, viewpoint and feelings a person has towards computers.

E-mail is an electronic letter sent over the Internet

List serve is an e-mail based mailing list for a group of people who share similar interests

Power Point is a desktop slide presentation that can be projected on a screen

Web sites are locations on the World Wide Web that tend to focus on a particular topic and are made up of web pages

Web pages are computer files constructed of html language and can be uploaded to a server

Hyperlinks are the highlighted words on a web page that link to other web pages

Web server is a host computer that allows a user to publish a web site so all computer users have access to it

Overview of the Remainder of the Study

The remainder of the study is arranged into four chapters consisting of a review of the related literature, research methodology, results of the study and the conclusion. A review of the related literature is presented in Chapter 2. The history of computer technology in education and the need for computer training workshops for school counselors are presented. The specific procedures of the study are explained in the research methodology section presented in Chapter 3. The results of this study are explained in Chapter 4 and Chapter 5 along with a discussion of the limitations, implications, and recommendations for future research.

CHAPTER 2
REVIEW OF RELATED LITERATURE

The advancement of computer technology has affected the school counseling profession. It serves as an efficient tool to assist school counselors in connecting to resources, ideas, and people. Computer tools, such as Power Point, electronic mail, Internet, and Web pages, enable school counselors to reach out and provide more services that otherwise would be tedious and less effective.

In order to bring about changes through the use of computer technology, school counselors need to feel capable and confident using this technology. Self-efficacy, the belief an individual has that he/she is capable of performing a task, is a factor in bringing about positive changes. An individual's perceived self-efficacy influences what a person does and how one interacts with others.

Self-efficacy also influences attitudes and motivation. While past experiences can inspire or discourage an individual, the way an individual thinks and feels about a task can affect the amount of energy and commitment placed into learning and performing that task. Self-efficacy is directly related to a person's wanting to learn more about and implementing computer technology.

Computer training workshops can help school counselors focus on the basic uses of computer technology in the counseling field. A workshop that includes lectures, demonstrations, hands-on activities, and practice sessions can provide counselors knowledge and practical skills. It can also impact school counselors by providing accomplishments that affect their view of their computer capabilities.

The Emergence of Personal Computers

The developments of the first personal computers dates back to 1975, after the first set of microprocessors were introduced (Frenzel, 1999). It was at this time that computer technicians perfected the process of placing an entire central part of a small computer on a single chip (Greenfield, 1980). These early computers arrived in kits and contained very limited input/output and storage devices. According to Gillman (1988), the microcomputer signaled the beginning of a second phase of computing. In the 1950's computer technology centered on numerical calculations and data processing, while computer technology developed in later years focused on communication and the gathering and distribution of information (Gillman, 1988).

More advanced and practical personal computers became available in the late 1970's with an increase in the availability of useful software. Primarily people owned these computers with technical backgrounds in computer programming or engineering (Frenzel, 1999). Two of the most important developments in the emergence of personal computers were the introduction of the IBM personal computer in 1981, and the Apple personal computer in 1984. These computers contained more efficient hardware and more advanced software, including word processing programs, databases, spreadsheets, and graphics.

Glossbrenner (1985) points out that technology continued to develop at a fast pace and forged ahead to create today's online information industry. These communication systems originally began in the 1960's as an inexpensive way for businesses to gain access to mainframe computers without purchasing or leasing one. The electronic information industry catapulted itself into every aspect of our society with the development of affordable microcomputers and gave people the opportunity to utilize various kinds of information (Glossbrenner, 1985; Greenfield, 1980). Personal computers became available to the public at attainable prices and people purchased them for work and play. The personal computer continues to develop sleeker styles and colors with more advanced capabilities with every passing year. Trilling and Hood (1999) point out that the view of computers has shifted from being a subject of study back in the Industrial Age to a tool for all learning in the Knowledge Age.

Computers in Schools

The introduction of the microcomputer propelled the use of computer technology in schools (Gaushell, 1984; Gillman, 1988). Prior to the microcomputer's arrival, schools utilized mainframe computers which were housed in administrative offices and used primarily for storing student information and accessing data from the district office (Myrick & Sabella, 1995). Gillman (1988) pointed out that ever since the first microcomputers were purchased for schools, most educators have struggled with understanding their potential.

In the nation's schools, the use of computer technology is increasing at a rapid rate. There are more Internet connections in classrooms, more computer labs, and libraries connected to the World Wide Web (Trotter & Zehr, 1998). In fall 2000, 77% of instructional rooms in public schools were connected to the Internet; this was an increase from 64% in 1999 (Cattagni & Farris, 2001). The percentage of public elementary schools with Internet access rose from 30% in 1994 to 88% in 1998. In addition, public secondary schools increased their Internet access from 49% in 1994 to 94% in 1998 ("The Condition of Education," 1999). According to research conducted by Cattagni and Farris (2001), 98% of all public schools in the United States had access to the Internet by the fall of 2000.

Computer technology influences educational change by persistently searching for new and innovative ways to improve instructional delivery (Gillman, 1988). There is a growing availability of computer technology and educational software in schools over the last decade (Kepner, 1986). Some early examples of applied computer technology used for instruction were found in high school mathematics departments. As software programs developed, other school disciplines began exploring how the computer might be used.

There are several instructional uses for microcomputers that can be found in schools. Tutorial programs, drill and practice activities, simulations, and games in every subject are now available. These programs utilize the microcomputer to help teach students through presentation of material, repetitive practice experiences, replication of real-life events, and teaching through competition (Gaushell, 1984).

Schools are establishing programs to understand the uses of technology and the ways that computers can facilitate the learning process. Lowe and Vespestad (1999) described a junior high school that formed a study group of teachers, administrators, and district personnel to align technology with the humanities curriculum in order to enhance teaching and learning. This program included researching computer hardware, software, and Web-based resources that could be integrated into the humanities coursework.

Due to different learning styles, teachers need to help identify effective teaching approaches for their students, one of which might be computer-assisted instruction (Hayes, 1999). In addition to instructional purposes, computer technology is visible in educational administration. Tasks including record keeping, monitoring attendance and tardy records, class scheduling, and bookkeeping can be made more efficient with the use of computers.

The application of computer technology in schools is increasing at a rapid rate and school districts want to incorporate more technology to enhance teaching and learning (Gaushell, 1984; Lowe & Vespestad, 1999). However, an integral part of connecting technology to the educational curriculum is to have adequate training of personnel who will implement the technology (Wang, 1999). Public school systems maintain the primary responsibility in providing this training that allows the incorporation of technology into the learning process (D'Andrea, 1995).

Technology and School Counseling

Wilson and Rotter (1982) have stated, " Education does not exist in a vacuum, but rather both affects and is affected by the culture as a whole and all its vital parts"(p. 353). Computer technology involvement is triggering education changes that will affect the way students are educated and counseled (Myrick, 1997). School counselors are realizing the benefits of utilizing computer technology in their guidance programs. For instance, this type of technology can allow counselors to share ideas and aid in the delivery of developmental guidance lessons for small groups or classes (Gerler, 1995; Myrick & Sabella, 1995; Sabella, 1996; Stone & Turba, 1999). In a study conducted by Russo (1991), video technology was incorporated into seven individual sessions with highly reluctant children with the intent of encouraging them to participate in the counseling process. The results indicated that the children who participated in the study increased their participation.

Computer technology is altering the ways in which individuals interact and communicate with one another (Myrick & Sabella, 1995). Gaushell (1984) viewed technology as an opportunity for school counselors to expand their role. By incorporating computer technology into the school counseling profession, counselors can allow more time to be spent on direct service to students, parents, and faculty (Sabella, 1996). Gathering and processing information, desktop publishing, presenting information via multimedia technology are ways counselors integrate technology into their roles as school counselors (Sabella, 1996). Computer technology creates an efficient and practical way to input and store student records, access vocational information, and facilitate needs assessments.

School counselors have been slow in implementing the use of technology in their profession due to lack of available information (D'Andrea, 1995; Gerler, 1995; Stone & Turba, 1999). The results from a study conducted by Owen and Weikel (1999), revealed that elementary school counselors used computers the least, while high school counselors utilized computer technology the most. These findings may be due to the increased scheduling and record keeping obligations that are performed by high school counselors. This study also examined levels of computer confidence. The scores also indicated that elementary school counselors have the least computer confidence in relation to middle and high school counselors. Most elementary counselors utilized technology primarily for record keeping and printing projects, while middle and high school counselors used technology for career information, daily attendance, and calendar events (Hardesty & Utesch, 1994; Owen & Weikel, 1999).

Computer technology keeps developing, and with each step of its evolution comes changes in the uses of computers in counseling (Sampson, Kolodinsky, & Greeno, 1997). Counselors are aware of more diverse ways to integrate computer technology into their programs; however there is a need for more in-service trainings to show counselors how it can be done successfully (Hardesty & Utesch, 1994; Trilling & Hood, 1999). Findings from research conducted by Owen and Weikel (1999) indicated that counselors feel inadequate when it comes to utilizing computers in their work. More educational technology support is needed to prepare school personnel, including school counselors, to successfully integrate the use of different technologies into the learning process (Trilling & Hood, 1999). Hayes (1999) pointed out that counselors do not need to be technology experts, but they need to feel comfortable with computers in order to successfully integrate them into their programs.

Computers and Multimedia Approaches

Multimedia offers school counselors the ability to creatively deliver developmental guidance interventions through computer-assisted technology (Gerler, 1995; McLellan, 1999). Multimedia tools are unique in that they allow learners to take in knowledge through different modalities, such as using oral or written language, drawings, graphics, video, and sound (Ray, 1999). More specifically, four computer tools that can assist school counselors in their guidance programs are Power Point, electronic mail, the Internet, and Web pages. These technological advances impact how school counselors can retrieve, disseminate and deliver information to help students, parents, and faculty.

Utilizing Power Point

Power Point presentations are a way that computer technology can aid school counselors in presenting information. Media-enhanced instruction, such as Power Point presentations, can engage audiences utilizing sounds, visuals, and demonstrations (Cauble & Thurston, 2000; Cornell, 1999). School counselors can use Power Point software to present workshops to parents, faculty, or students on a variety of topics. For instance, a counselor could present a Power Point presentation to faculty and staff on how to use effective classroom management skills. The presentation could include additional technology such as links to Web sites with case studies. Power Point presentations can also be used when educating parents about standardized testing, graduation requirements, or college searches. Further, Power Point presentations can add to classroom guidance units by providing sounds and visuals to help engage students in learning about stress management techniques, conflict resolution skills, or organizational strategies (Van Horn & Myrick, 2001).

Communicating via E-mail

Electronic mail is becoming a universal means of communication by providing an efficient and effective means of asking questions, requesting information, and responding (Van Horn & Myrick, 2001). McLellan (1999) acknowledged the importance of e-mail as a direct channel of communication for students and parents. For example, parents can e-mail the school counselor to find information regarding college admission procedures, standardized testing dates, or an upcoming small group counseling intervention. The utilization of e-mail has many benefits by saving both counselors and parents time in requesting information and providing a quick response. Students can also utilize e-mail to communicate with students from other schools about common interests (Van Horn & Myrick, 2001).

Computer technology can save counselors time and energy. For instance, electronic mail and listservs give counselors the ability to be instantly in touch with other counselors from around the county, state, country, or world (Rust, 1995). Using this technology, counselors can share ideas and get feedback on particular questions impacting their developmental guidance programs. Electronic mail can provide even more support by assisting with peer supervision, where colleagues consult with each other and share ideas and practices. (Myrick & Sabella, 1995).

Accessing the Internet

The Internet was originally created from computer networks that allowed the military to gain information from far away computer systems (Gillman, 1998; Sampson, Kolodinsky, & Greeno, 1997). Current telecommunication systems and computers are enhancing the way we learn, play, and work (Trilling & Hood, 1999). Online services provide different kinds of electronic information to users, such as topic specific Web sites, live conferences with people, and current news bulletins (Rust, 1995). Modems and telecommunication services allow students the opportunity to interact with people from different parts of the county or world and learn about their way of life (D'Andrea, 1995).

In the role of advocacy, technology can enhance a counselor's ability to retrieve and disseminate information (Stone & Turba, 1999). Computer literate counselors can contribute to school reform by keeping abreast of the issues and promoting the role of the school counselor (Casey, 1995). The Internet can provide information to users regarding legislative events that directly affect the school counseling profession.

Sabella (1998) pointed out that school counselors became more knowledgeable about counseling techniques and program ideas by using the Internet to search materials, such as counseling articles, counseling resources, and scholarly journals. Research conducted by Lundberg and Cobitz (1999) examined counselors and their use of technology. The results from the study concluded that Internet data searches were the most effective and reasonably priced type of technology being utilized.

Creating a Web page

One of the areas in computer technology that is changing the way counselors promote their programs and retrieve information is through Web pages (Sabella, 1998). Web pages are computer files constructed of html language and can be uploaded to a server. These pages can be located through the World Wide Web and can be made up of sounds, graphics, animation, text, and video.

It is vital for school counselors to define and communicate their role to others (Staley & Carey, 1997). School counselors can utilize Web pages to help define that role and promote their program to administration, faculty, parents, and the community. For example, a counselor can create a Web page including the specific activities they perform in their school. These activities may include individual, small, and large group counseling, consultations with parents and teachers, and coordinating recognition programs. A Web page can also promote certain school-wide guidance and counseling programs, such as peer mediation, student recognition, and character development activities. In addition, a guidance department can post a master calendar on its Web page that advertises special upcoming events (Van Horn & Myrick, 2001).

According to Ruffini (2000) an important element in constructing a Web site is to consider the target audience. A Web page targeting parents and students can focus on upcoming counseling events, standardized testing dates, and college admission requirements. This type of Web page can assist parents and students in planning for future events. If the target audience is aimed more at community members and legislative personnel, the Web page might include accountability reports on the number of small groups, classroom guidance units, or parent/teacher consultations that were held in a semester. Web pages are a way to promote school guidance programs and educate others about the role of school counselor. Sampson et al. (1997) reports that the growth of counseling Web pages is increasing every year with technological advancements.

Hayes (1999) pointed out that the counselor education field was growing in its interest and commitment to integrating this type of computer technology. Colleges and universities are utilizing Web pages to introduce counseling faculty and their specific academic specialties and interests. This information can be helpful to prospective students researching graduate programs that meet their needs.

Computer Training

"If today's students have changed the way they learn, then today's counselors must change the way they communicate. If learner outcomes can be better achieved through technology, it is incumbent that counselors adapt their strategies accordingly" (Casey, 1995; p.34). In order to follow the growth of technology, school counselors need to increase their awareness of current technology and learn to utilize skills through training (Lundberg & Cobitz, 1999). Schools, however, spend money on hardware and software, but often forget to provide adequate training for the staff. In reviewing the research conducted on computer technology one critical need consistently surfaced. This need is for adequate professional development and training for school personnel, including school counselors (Ray, 1999).

In a study conducted by Grossnickle, Laird, Cutter, and Tefft (1982), the major reason why computer technology was not being utilized in schools was due to a lack of training. The study indicated that the majority of school departments felt that they lacked information on the practical ways that microcomputers could be applied in their field (Grossnickle et al., 1982). School counselors need to feel confident and capable of utilizing growing computer technology in order to effectively implement this technology in their work.

Self-efficacy and Behavior

A key concept of social learning theory is the belief in an individual's capability of performing a specific behavior, also known as self-efficacy. Bandura (1982) emphasized that a person's judgments of self-efficacy affected how much effort an individual spends on an activity and how much time that person would persist in the face of adverse experiences. A person's view of themselves affects thought patterns and emotional reactions in relation to a behavior (Bandura, 1982).

According to social learning theory, judgments of self-efficacy are primarily made up of four principle factors. These elements are based on performance accomplishments, vicarious experiences, verbal persuasion, and physical states (Bandura, 1977; 1982). Performance accomplishments are the most influential of the four elements because they are based on mastery of experiences (Bandura & Adams, 1977). For instance, an individual who succeeds at a particular task will increase their self-efficacy regarding that task; however, an individual who repeatedly fails at a particular task will have a lower sense of self-efficacy about that task (Bandura, 1977). Performance accomplishments through participant modeling can provide for additional opportunities for individuals to gain knowledge of a behavior while practicing and making corrections toward perfecting a skill (Bandura, 1977; Bandura & Adams, 1977).

Vicarious experiences, including live or symbolic modeling, can also affect an individual's perceptions. Observing another person successfully perform a behavior can raise efficacy expectations. Verbal persuasion or encouraging comments can also influence self-efficacy; however, neither one of these principles affects the changing of efficacy beliefs as strong as performance accomplishments (Bandura, 1977; Gorrell, 1990). Emotional arousal is the final element that can influence an individual's perceived efficacy. An individual experiencing stress or anxiety in performing an activity may associate those feelings with personal inadequacy.

Results from research confirm that each of these different types of influence can increase or build-up self-perceptions of efficacy (Bandura, 1982). Regardless of the element that increases self-efficacy, behavior is closely related to self-efficacy change. The higher the level of perceived self-efficacy, the greater the performance success (Bandura, 1982).

An individual's sense of expectations based on personal mastery affects both the initiation and persistence in performing that behavior (Bandura, 1977). The strength of an individual's self-efficacy plays a part in completing a behavior or task. For example, the stronger a person's perceived self-efficacy, the more likely they will persist in overcoming obstacles to attain a goal. Research compiled by Schunk (1990) found that motivation and efficacy are interacting mechanisms. An individual with an increased sense of efficacy for performing can be motivated to behave in ways that can enhance a performance.

Based on their research, Bandura and Adams (1977) claimed that "performance accomplishments through the aid of participant modeling produced higher, stronger, and more generalized expectations of personal efficacy than do vicarious experiences alone (p. 288). According to Gorrell (1990) various research studies contributed data that shows definite links between self-efficacy and behavioral intentions. A learner's feelings of perceived efficacy leads to either increases or decreases in persistence and performance of a task or behavior.

Self-efficacy and Computer Technology

Individuals need to feel confident and comfortable using computer technology, such as e-mail, telecommunications systems, and software programs, before they can fully embrace them (Ertmer, Evenbeck, Cennamo, & Lehman, 1994). The use of computer technology can be traced back and linked to self-efficacy beliefs. For instance, Compeau and Higgins (1995) conducted research to examine the factors that influence an individual's use of technology. The results of their study showed that participants with higher self-efficacy beliefs used computers more and experienced less computer related anxiety. These findings point to the idea that individuals with higher self-efficacy beliefs regarding computers will see themselves as able to utilize computer technology, no matter how difficult or challenging. However, individuals who have lower self-efficacy beliefs about computers will become more frustrated and more anxious working with them, and therefore become intimidated and falter when obstacles present themselves (Compeau & Higgins, 1995).

In studying the implementation and use of computer technology it is imperative to study an individual's self-perceptions and behavior (Olivier & Shapiro, 1993). A study conducted by Jorde-Bloom (1988) examined predictors of computer use and uncovered results that indicated that a person's attitude regarding computers is a strong indicator of the level of computer use.

Wang (1999) revealed that computer literacy courses provided positive influences upon teachers' computer experience and attitudes. However, lack of familiarity with computer technology can be a contributing factor to an individual's resistance (Madsen & Sebastiani, 1987). A study by Madsen and Sebastiani (1987) showed that following a computer literacy course the participants significantly improved their attitudes towards microcomputers, as well as finding an improvement in teachers' knowledge regarding computers. Olivier and Shapiro (1993) noted that in their research the most effective computer training method incorporated behavior modeling. This type of training consists of demonstrations and relies on changing self-efficacy beliefs to influence performance. Bandura (1977) emphasized the importance of performance accomplishments in altering a person's attitude and outlook on a behavior. In a study conducted by Lewis (1985), it was shown that direct involvement was the biggest influence on self-perceptions when working with computers. When the learner is an actual participant, the more likely the learner's perception of their abilities will increase, along with attitudes (Madsen & Sebastiani, 1987).

Technology is accepted by our culture, including our schools, but how is this technology being implemented to increase learning opportunities for students? Technological advances are providing opportunities for school counselors to implement tools in order to create successful comprehensive and developmental guidance programs (Casey, 1995). However, school counselors need to remain open to change and pave their own way through the technological advances that will impact and add to the school counseling field (Wilson & Rotter, 1982).

CHAPTER 3
METHODOLOGY

This study investigated the effectiveness of an applied computer technology workshop on the attitudes, knowledge, skills, and self-efficacy of school counselors in Orange County, Florida. The training workshop served as the treatment to teach counselors how to implement computer skills, such as using electronic mail, searching the Internet, developing Power Point presentations, and creating Web page designs. Further, this intervention attempted to improve attitudes regarding computer technology and the self-efficacy of school counselors. A quasi-experimental design was used to test related hypotheses.

Population

The population of interest consisted of professional school counselors currently working in either elementary, middle, or high schools in Orange County Public Schools in Orlando, Florida. A total of 104 elementary schools, 27 middle schools, and 21 high schools serve students in the Orange County public school system. There were 285 school counselors assigned to Orange County Public Schools at the time this study was conducted. More specifically, there were 130 school counselors at the elementary level, 85 school counselors at the middle school level, and 70 school counselors at the high school level. Orange County contains a diverse population and serves students from a variety of ethnicities. There were approximately forty thousand students enrolled in Orange County Public Schools at the time this study was conducted.

Sampling Procedure

Approval by the University of Florida's Institutional Review Board and permission from Orange County Public Schools were granted prior to beginning the study. A meeting with the Student Development and Guidance Lead Counselors representing elementary and secondary school counselors was made to inform them about the study. At this meeting, the design of the study was discussed, including the population, sampling procedures, and treatment.

The workshop training was offered on two different days and each school counselor chose a day that they were able to attend. School counselors from all three levels, elementary, middle, and high, in Orange County Schools in Orlando received notices advertising the one-day computer workshop training opportunity. Flyers (Appendix A) describing the trainings were sent through Orange County Public School's e-mail system and mailed to each school's counselor.

Assignment of Subjects to Groups

School counselors signed up for one of two workshop days that they would be able to attend. Participants were placed into either the treatment or control groups as registrations were received. School counselors that registered for either of the two computer trainings were automatically placed in the treatment group to participate in the study's intervention. The number of participants for each treatment group was limited to the number of computers available in each computer lab, however both workshops did not fill up to full capacity. School counselors who were interested in signing up for the workshop, but could not make either date were placed on the waiting list for future computer trainings and were assigned to the control group.

Treatment and control group participants in the study received an informed research consent form (Appendix B) explaining the study's purpose and granting permission to use data gathered from the training. Participants in the treatment group also received a phone call confirming interest in the training and were mailed a confirmation letter with the time and date of the training. Counselors assigned to the control group were invited to attend future training workshops to be offered later in the school year.

Resultant Sample

Out of the 285 elementary, middle and high school counselors in Orange County, Florida, 36 counselors voluntarily participated in the training workshop and comprised the treatment group. The first training date had a total of 15 counselors in attendance; while the second training consisted of 21 participants. Another 36 school counselors participated in the control group. Thus, there were a total of 72 participants in the study, with 36 assigned to one of the two treatment groups and 36 assigned to the control group.

The demographic information on the total sample comparing gender and school level with treatment and control groups is shown below in Table 3-1.

Table 3-1
Demographic Characteristics of Sample by Gender and School Level

Participants	Male	Female	Elementary	Middle	High	Other
Total Sample n=72	14	58	28	24	17	3
Treatment n= 36	7	29	17	12	6	1
Control n= 36	7	29	11	12	11	2

Research Design

Hypotheses were tested based on data derived from a pretest-posttest control group design. A quasi-experimental design was used with pre and post measures of self-efficacy, computer knowledge, skills, and attitudes. Subjects participated in one of two experimental groups. One (E1) was a treatment group and participants took part in the professional workshops. The second (E2) served as the control group. Each participant in the two experimental groups completed a pretest survey.

The treatment group received a one-day computer-training workshop (Appendix C) with hands-on instruction in using e-mail to communicate with others, searching the Internet, developing Power Point presentations, and creating work-related Web pages. Two weeks following the treatment, posttest surveys were sent to all treatment group participants and returned through the district's courier system. Participants in the control group also received a posttest survey approximately two weeks following the initial pretest, but they did not participate in any workshops during the study. Table 3-2 shows the design of the study using a pretest-posttest control group design.

Table 3-2
Pre-Post Control Group Design

Experimental Groups	Pre-test	Treatment	Post-test
(E_1) Treatment	O_1 O_2 O_3	X_1	O_4 O_5 O_6
(E_2) Control	O_1 O_2 O_3	X_2	O_4 O_5 O_6

Key to design items

O_1 = Pretest of School Counselor Computer Competency Scale
O_2 = Pretest of Attitude Toward Computer Technologies
O_3 = Pretest of General Self-efficacy Scale
O_4 = Posttest of School Counselor Computer Competency Scale
O_5 = Posttest of Attitude Toward Computer Technologies
O_6 = Posttest of General Self-efficacy Scale
X_1 = One-day Computer Training Workshop
X_2 = Control Group

Experimental Procedures

- Flyer advertising the computer technology workshop was faxed and mailed to every school counselor working in a public school in Orange County. The flyer included the computer skills that will be taught and the dates of the workshops.

- School counselors voluntarily signed up through the district office for one of the two workshop dates.

- Participants who registered for either of the two training workshops were assigned to the treatment group.

- Participants who had a desire to attend the workshop, but could not make either of the two training dates were placed on waiting lists and were automatically assigned to the control group.

- Participants in the treatment group received a confirmation notice of the upcoming workshop.

- Treatment group participants received the pretest immediately upon arriving at the computer training workshop site prior to the start of the intervention.

- The researcher also used the county courier to mail participants in the control group a letter about future training opportunities along with a consent letter and pretest. There was a follow-up phone call to all control group participants to let them know that two weeks following the pretest a posttest would be mailed out to them. The county courier was used to transfer all pre and posttest instruments.

- Two weeks following each workshop, participants in the treatment and control group received a copy of the posttest survey. Once again, these were sent back to the researcher via the county courier system.

- Follow up phone calls and e-mails were placed to those participants who failed to return their posttest within the given time frame.

Independent and Dependent Variables

The independent and dependent variables are described in this section. These variables were reflected in the organization and procedures of the professional workshops and the instruments that will be used to collect data for the study. All participants in the study received a pretest and posttest consisting of three instruments or measures (Appendix D). The three instruments were (a) Attitudes Toward Computer Technologies (Delcourt & Kinzie, 1994), (b) The Self-efficacy Scale (General subscale-Sherer, Maddux, Mercandante, Prentice-Dunn, Jacobs, and Rogers, 1982), and (c) The School Counselor Computer Competency Scale. The one independent variable in this study was the computer-training workshop or intervention.

Computer Training Workshop

The one-day in-service training workshop represented the independent variable that was examined. In the workshop participants focused on skills related to the work of a school counselor. The workshop provided counselors with practical ways to implement computer technology in their school guidance programs.

The workshops were held in the computer lab at the Orange County Educational Leadership Center. The computer lab accommodated enough seating for 30 individuals with 30 computer stations. Each computer was connected to the Internet and utilized Internet Explorer as its browser. All the computers in this lab had Power Point and Microsoft Word software and were equipped with Microsoft Outlook. The computer lab also included a main projection screen. This enabled participants to follow step-by-step procedures in order to create Power Point slides and create a Web page. Participants followed demonstrations at their computer stations and had time to experiment with the implementation of computer tools.

The one-day treatment workshop was seven hours long and included 45 minutes for lunch. Upon arrival each participant received a training manual (Appendix C) outlining all four training sessions. This manual provided counselors with a guide to follow for acquiring and using the computer skills they learned.

The workshop focused on four main areas or units about applied computer technology including (a) e-mail, (b) searching the Internet, (c) Web page design, (d) and Power Point presentations. These four areas and related skills were chosen because they can be used in the work of a school counselor. They also appealed to counselors because they were practical and could be put into practice almost immediately to enhance a school guidance program.

The use of the Educational Leadership Center (ELC) computer lab allowed participants to follow the workshop leader and practice the computer skills that were presented. A hands-on approach was used in the workshop training. Based on previous studies, it was assumed that such an approach following a brief lecture and demonstration would increase the probability that counselors would learn and implement the skills presented at the workshop. Participants were coached through each of the four skills in order to put the idea to use in their respective schools.

The four areas of the workshop were viewed as four units and were presented during two morning sessions and two afternoon sessions. The first session in the morning workshop covered the basics of electronic mail. This section focused on skills necessary for sending and receiving messages, attaching files or documents, and creating e-mail group lists. The value and limitations of using this type of computer application were discussed. Participants composed e-mail messages and sent them out. Next, participants learned how to form group lists so that they were able to send multiple e-mails at one time. Participants in the workshop created various group lists based on their school's grade level and special interests.

The second session in the morning examined the nature of the Internet and the World Wide Web (WWW). This part of the workshop focused on the WWW resources available to counselors and ways to access them on the Internet. Several Web sites were located and discussed, along with their benefits and uses in a school's guidance program. Each participant had time to explore some of the Internet sites and performed computer searches on a variety of topics of interest. Participants took time to have lunch, which was in the ELC cafeteria. This gave them time to talk with one another and reflect on what they were learning and perhaps some free time to return to the computer lab, visit other Web sites, and practice some skills.

The third unit of the workshop continued after lunch with Web page design. Counselors were shown an example of a school counselor Web page with hyperlinks and graphics. This was intended to spark interest and raise awareness of what might be done when a counselor builds Web pages. The Web sites were made available to the participants so that they could visit them again or perhaps use them as models. This session included a step-by-step demonstration of creating a Web page and provided ideas of how counselors could utilize Web pages as tools in guidance programs at each school level.

Power Point presentations were the topic of interest in the final session of the workshop. Participants were instructed on the basics of Power Point design and how to create slides to help illustrate a brief presentation about school guidance. They learned how to incorporate clip art, videos, and sound to make their presentations interesting to particular audiences. Counselors explored and experimented by creating different slides and transition techniques to create useful Power Point presentations. Some sample presentations were made available; however, each participant was given the task of building a set of slides to match a presentation they believed would be useful in their respective schools.

At the end of the workshop, each participant was encouraged to implement the computer skills they had practiced into developmental guidance programs at their current work location. The question that remained was would these counselors return to schools and use the skills they have learned. In the process, will knowledge and attitudes be changed? And will self-efficacy levels move in a positive direction?

Methods of Assessment

Three instruments were used to examine the effects in this study. They were the Attitudes Toward Computer Technologies (Delcourt and Kinzie, 1994), The General Self-efficacy Scale (Sherer, Maddux, Mercandante, Prentice-Dunn, Jacobs, and Rogers, 1982), and the School Counselor Computer Competency Scale.

Attitudes Toward Computer Technologies (ACT)

The Attitudes Toward Computer Technologies (Form A) instrument contained 19-items used to access perceived usefulness of and comfort with computer technologies (Kinzie, Delcourt, & Powers, 1994.) This instrument has equally balanced negative and positive phrased item stems and maintained a 4-point Likert response format, with anchors ranging from Strongly Disagree (1) to Strongly Agree (4). The Attitudes Toward Computer Technologies contains two subscales, 11 items measuring usefulness of computer technologies and 8 items measuring comfort/anxiety with computer technologies. Measurement scores of 44 and 32 are the highest possible scores for the Usefulness and Comfort/Anxiety scales, respectively. The two can be combined to a high possible score of 76 in order to obtain an overall measure of attitude for the entire ACT instrument. Respondents receiving high scores on the overall instrument reflect comfort with using computer technologies as tools to perform a variety of tasks. (Kinzie, Delcourt, & Powers, 1994).

In one study, the Attitudes Toward Computer Technologies instrument was administered to 328 college students attending six universities from across the country. The data collected was used to conduct a principal component analysis and examine the internal consistency reliability of the Attitudes Toward Computer Technologies instrument. Test responses were exposed to a Principal Component Analysis (PCA) using Kaiser's criterion to examine construct validity (Delcourt & Kinzie, 1993). The results revealed a three-factor solution explaining 52.3% of the variance in the set of 19 items. The first factor measures Comfort/Anxiety about computer technologies, while the second and third factors combine to reveal perceived Usefulness of computer technologies. Factor loadings for items related to this scale were in the range of .66 to .82 and Varimax and oblique rotations generated similar factor structures. (Kinzie et al., 1994).

The internal consistency reliability for the Attitudes Toward Computer Technologies instrument was examined for each factor. An internal consistency reliability alpha estimate of .89 was obtained for the entire 19-item Attitudes Toward Computer Technologies instrument. The reliability estimates for the individual factors were .83 for measuring computer Usefulness and .90 for measuring Comfort/Anxiety (Delcourt & Kinzie, 1993).

The Self-efficacy Scale (General Subscale)

The General Self-efficacy Scale was developed to establish expectancies of self-efficacy and to construct an instrument that was not connected to a specific situation or behavior (Sherer & Adams, 1983; Sherer et al., 1982). The Self-efficacy Scale is comprised of 23 items that revolve around the principles that general self-efficacy is made up of past successes and failures in one's life, that general self-efficacy expectations may be influenced by individual differences, and that a person's general self-efficacy should influence their expectations in original situations (Sherer et al., 1982). The items on the General Self-efficacy Scale focus on the willingness to initiate behavior, complete behavior, and persevere despite hardships (Shelton, 1990).

Evidence for construct validity for this instrument was sought by comparing the General Self-efficacy Scale with six other personality measures. Criterion validity was gained by the positive correlations between the Self-efficacy Scale and vocation, educational, and military success. This data created the two subscales, a General Self-efficacy subscale, and a Social Self-efficacy subscale (Shelton, 1990; Sherer et al., 1982). The following studies represent the data for reliability, construct validity, and criterion validity for the Self-efficacy Scale.

In one study 376 participants completed the Self-efficacy Scale and six other personality measures. Subjects rated the items on a 14-point Likert scale with anchors ranging from "strongly disagree" to "strongly agree." Items were created to measure general self-efficacy expectancies in social skills and vocational capabilities. The original version of the General Self-efficacy Scale had 36 items, however 13 items were later discarded because they did not load at the 4.0 level or above on one factor (Sherer et al., 1982). This resulted in the Self-efficacy Scale having 23 items with two subscales. Factor 1 contained 17 items and comprised the General Self-efficacy subscale (M=172.65, SD= 27.31). Factor 2 was made up of six remaining items that explored social situations and was named the Social Self-efficacy subscale (M=57.99, SD= 12.08). Cronbach alpha reliability coefficients for the General Self-efficacy and the Social Self-efficacy subscales were obtained and found to be .86 and .71, respectively (Sherer et al., 1982; Sherer & Adams, 1983). In order to confirm the original factor structure, the revised scale was given to a new sample of 298 students. The results from the factor analysis replicated the original two-factor solution, consisting of the General Self-efficacy and the Social Self-efficacy subscales (Sherer et al., 1982).

Construct validity for the Self-efficacy Scale was determined by correlating scores on the instrument with measures from several other personality instruments. The predicted correlations between the two subscales of the Self-efficacy Scale and the other measures were collected and "all were moderate in magnitude in the appropriate direction" (Sherer et al., 1982, p. 667). Woodruff and Cashman (1993) confirmed the significance of the Pearson correlations with other measures and this evidence showed construct validity exists in the Self-efficacy Scale. Sherer and Adams (1983) conducted a later study with 101 participants to reexamine the construct validity of the Self-efficacy Scale. The original version of the instrument was slightly modified so that items were rated on 5-point Likert scale rather than the 14- point scale to help facilitate scoring (Sherer & Adams, 1983). The results of this study support the use of the Self-efficacy Scale as a valid measure of personal confidence in the ability to initiate and persevere through a task (Shelton, 1990).

Criterion validity was demonstrated when 150 participants completed the Self-efficacy Scale and a demographic questionnaire created to measure success in vocational, educational, and military areas (Sherer et al., 1982). The results from the demographic questionnaire were correlated with both subscales on the Self-efficacy Scale. According to Sherer et al. (1982) the General Self-efficacy Scale predicted past success in vocational, educational, and military areas; while the Social Self-efficacy Scale predicted past vocational success. Criterion validity was also recognized when Woodruff and Cashman (1993) used a t-test to compare the scores on the General Self-efficacy subscale with individuals expecting an A grade against those expecting a B grade. The findings matched higher efficacy scores with those expecting A grades than those expecting B grades, and therefore provides more evidence for the criterion validity of the General Self-efficacy subscale (Woodruff & Cashman, 1993).

The School Counselor Computer Competency Scale

The School Counselor Computer Competency Scale was created to measure school counselors' computer knowledge and skills. This instrument also measures counselors' implementation and use of computer technology in the schools. This instrument is comprised of 16 items containing three factors.

One factor focuses on the implementation of computer technology and includes five items questioning the number of times a certain task is performed. More specifically, these behaviors include e-mail correspondence, Internet searches, Power Point, and Web page design. The second factor concentrates on computer skills and is made up of five items that measure a person's ability to perform specific tasks utilizing computer technology. The third factor centers on computer knowledge and includes six items that measure the amount of information a counselor has in relation to understanding the uses of specific computer technology.

Evidence for content validity was determined for the School Counselor Computer Competency Scale by judging whether the test items included the content that the test claimed to measure (Gall, Borg & Gall, 1996). The content validity of this scale was explored when three school counselors not participating in the study reviewed the instrument and provided feedback on its content. Each rater gave a brief written summary that provided feedback and comments as to what they felt the instrument was evaluating. All three counselors noted that the intent of the School Counselor Computer Competency Scale was to examine a school counselors' current use of computers, knowledge about computers, and computer proficiency.

One way the reliability for the School Counselor Computer Competency Scale was accessed was by taking multiple measurements on the same subjects with the same instrument at different times through test-retest reliability (Shavelson, 1996). Test-retest is a common type of reliability testing when alternate forms are not available (Gall, Borg, & Gall, 1996). The School Counselor Computer Competency Scale was administered to 30 school personnel and followed up two weeks later with another administering to the same school sample. The scores from two different testing occasions were used to calculate the correlation coefficient and determined instrument reliability.

An item analysis was conducted on all 16 items proposed as a measure of computer use, knowledge, and skills as developed in the School Counselor Computer Competency Scale. After conducting this item analysis, the first five quantitative items were discarded from the final analysis. The reason these five items were not used was due to the reliability of the data provided on frequency of use was considered to be very poor and contained unreliable estimates of self-reported use. The remaining 11 items used a Likert scale with a 5- point response format. Initially, items 25 through 29 comprised the computer skills construct and items 30 through 35 were considered the computer knowledge construct. An initial item-analysis was conducted on the pre-test scores of each proposed factor. The initial Cronbach Alpha values were .654 for skills and .849 for knowledge as shown in Tables 3-3 and 3-4, respectively.

Table 3-3
Statistical Reliability Analysis of the Initial Computer Skills Items

	Summary for scale: Mean= 11.8310 Std. Dv.=3.668 **Cronbach alpha: .654381** Standardized alpha: .719 Average inter-item correlation: .353884				
Variable	Mean if deleted	Var. if deleted	StDv. if deleted	Item-Total Correlation	Alpha if deleted
ITEM25	8.60563	8.12617	2.850643	**0.364294**	**0.643622**
ITEM26	8.19718	9.14422	3.023941	**0.262461**	**0.691832**
ITEM27	9.90141	8.96211	2.993679	0.529987	0.549235
ITEM28	10.33803	10.16743	3.188640	0.573764	0.570336
ITEM29	10.28169	9.72347	3.118248	0.530019	0.566074

Table 3-4
Statistical Reliability Analysis of the Initial Computer Knowledge Items

	Summary for scale: Mean= 19.3803 Std. Dv.=5.370 **Cronbach alpha: .848783** Standardized alpha: .848 Average inter-item correlation: .494095				
Variable	Mean if deleted	Var. if deleted	StDv. if deleted	Item-Total Correlation	Alpha if deleted
ITEM30	15.76056	19.22436	4.384559	0.726110	0.804819
ITEM31	16.18310	18.48760	4.299721	0.708228	0.808511
ITEM32	17.50704	23.46122	4.843678	**0.397892**	**0.862046**
ITEM33	16.08451	19.62666	4.430199	0.622397	0.826553
ITEM34	15.14085	22.14918	4.706291	0.635980	0.827198
ITEM35	16.22535	19.10415	4.370829	0.727464	0.804380

Subjective evaluation of item-total correlations led to exclusion of items 25 and 26 from the skills construct in order to gain internal consistency. Additionally, item 32 was removed from the knowledge construct and placed into the skills category to increase the reliability of this category. The final skills construct shown in Table 3-5 consisted of items 27, 28, 29, and 32 with a new increased Cronbach alpha value of .794. The final knowledge construct illustrated in Table 3-6 shows the new items 30, 31, 33, 34, and 35 now have an increased Cronbach alpha value of .862. Both Cronbach alpha values were above the .70 threshold and were acceptable reliability coefficients.

Table 3-5
Statistical Reliability Analysis- Final Computer Skills Items

<table>
<tr><td rowspan="2">Variable</td><td colspan="5">Summary for scale: Mean= 6.84507 Std. Dv.=2.886
Cronbach alpha: .794256 Standardized alpha: .803
Average inter-item correlation: .524179</td></tr>
<tr><td>Mean if deleted</td><td>Var. if deleted</td><td>StDv. if deleted</td><td>Item-Total Correlation</td><td>Alpha if deleted</td></tr>
<tr><td>ITEM27</td><td>4.915493</td><td>4.246380</td><td>2.060675</td><td>0.690427</td><td>0.698075</td></tr>
<tr><td>ITEM28</td><td>5.352113</td><td>5.580242</td><td>2.362254</td><td>0.635896</td><td>0.742481</td></tr>
<tr><td>ITEM29</td><td>5.295774</td><td>5.335052</td><td>2.309773</td><td>0.547057</td><td>0.770358</td></tr>
<tr><td>ITEM32</td><td>4.971831</td><td>4.590755</td><td>2.142605</td><td>0.591311</td><td>0.754602</td></tr>
</table>

Table 3-6
Statistical Reliability Analysis- Final Computer Knowledge Items

<table>
<tr><td rowspan="2">Variable</td><td colspan="5">Summary for scale: Mean= 17.5070 Std. Dv.=4.878
Cronbach alpha: .862046 Standardized alpha: .866
Average inter-item correlation: .570279</td></tr>
<tr><td>Mean if deleted</td><td>Var. if deleted</td><td>StDv. if deleted</td><td>Item-Total Correlation</td><td>Alpha if deleted</td></tr>
<tr><td>ITEM30</td><td>13.88732</td><td>15.14223</td><td>3.891302</td><td>0.724046</td><td>0.822058</td></tr>
<tr><td>ITEM31</td><td>14.30986</td><td>14.35469</td><td>3.788759</td><td>0.721060</td><td>0.823452</td></tr>
<tr><td>ITEM33</td><td>14.21127</td><td>15.68776</td><td>3.960778</td><td>0.595371</td><td>0.856664</td></tr>
<tr><td>ITEM34</td><td>13.26761</td><td>17.57627</td><td>4.192407</td><td>0.661738</td><td>0.843924</td></tr>
<tr><td>ITEM35</td><td>14.35211</td><td>14.90419</td><td>3.860594</td><td>0.742310</td><td>0.817122</td></tr>
</table>

Hypotheses

The following eight hypotheses were investigated in this study.

H_{01}: There will be no significant difference (.05 level) between E_1 and E_2 groups across all of the established factors, as measured by the overall survey.

H_{02}: There will be no significant difference (.01 level) between E_1 and E_2 groups on counselor technology skills, as measured by the skills subscale of the School Counselor Computer Competency Scale.

H_{03}: There will be no significant difference (.01 level) between E_1 and E_2 groups on counselor technology knowledge, as measured by the knowledge subscale of the School Counselor Computer Competency Scale.

H_{04}: There will be no significant difference (.01 level) between E_1 and E_2 groups on the usefulness of computer technology subscale, as measured by the Attitudes Toward Computer Technologies instrument.

H_{05}: There will be no significant difference (.01 level) between E_1 and E_2 groups on counselor comfort/anxiety towards computer technology subscale, as measured by Attitudes Toward Computer Technologies instrument.

H_{06}: There will be no significant difference (.01 level) between E1 and E2 groups on self-efficacy, as measured by the General Self-efficacy Scale.

H_{07A}: There will be no significant group by gender interaction (.05 level) between E_1 and E_2 groups across all of the established factors, as measured by the overall survey.

H_{07B}: There will be no significant main effect for gender (.05 level) between E_1 and E_2 groups across all of the established factors, as measured by the overall survey.

H_{08A}: There will be no significant group by school level interaction (.05 level) between E_1 and E_2 groups across all of the established factors, as measured by the overall survey.

H_{08B}: There will be no significant main effect for school level (.05 level) between E_1 and E_2 groups across all of the established factors, as measured by the overall survey.

Data Analysis

In reviewing the collected data, a multiple analysis of variance (MANOVA) was conducted to determine if a difference existed between the treatment and control groups. A 2 (Group) x 5 (Factors) MANOVA utilizing the Wilks Lambda test statistic was performed. A criterion p-value of .05 was used to determine the overall significance of the test.

Each of the dependent variables was analyzed using a univariate t-test to determine on which variables the groups differed significantly. A Bonferroni technique was applied to control the family-wise error rate at an overall value of .05. Since there were five univariate comparisons, a criterion p-value of .01 was used to determine significance for each factor.

Two additional tests were performed in order to examine the influence of gender and school level on the treatment effects. One of the multiple comparisons used a 2 (Group) x 2 (Gender) x 5 (Factors) MANOVA using a Wilks Lambda test statistic. A criterion p-value of .05 was used on all tests to determine statistical significance.

A second multiple comparison used a 2 (Group) x 3 (School Level) x 5 (Factors) MANOVA using a Wilks Lambda test statistic. This analysis was used to answer the questions of whether there was an interaction between groups and school level or if there was a main school level effect. A criterion p-value of .05 was also used to determine overall significance.

CHAPTER 4
RESULTS

The study examined the effects of a computer training workshop on school counselors' self-efficacy, knowledge, skills, and attitudes regarding computer technology. Data was collected from 72 school counselors from elementary, middle, and high schools throughout Orange County Public Schools in Central Florida. School counselors serving students from Kindergarten through 12th grade attended professional workshops to learn how applied technology can be used in their work. The effects of the workshops were measured in terms of increased computer knowledge and skills, counselor attitudes towards computers, and self-efficacy.

School counselors interested in learning about computer technology skills were assessed on their pre-existing knowledge, skills, attitudes, and use of computer technology. A quasi-experimental design was used in which individuals were assigned to either a treatment or control group. The treatment group received a one-day workshop focusing on learning specific computer technology skills. Approximately two weeks after the workshop, participants retook the assessment to determine if any changes had occurred from the pretest. Control group participants also completed the assessment a second time, within a similar time frame as the treatment group.

Data was collected from a survey that included three instruments that were used to examine the effects of the study's intervention. These instruments included Attitudes Toward Computer Technologies (ACT), which examined school counselors' attitudes towards computers. Two subscales of this instrument measured the perceived usefulness of computer technology and the amount of comfort/anxiety in using computer technologies. The General Self-efficacy Scale measured school counselors' perceptions of their self-efficacy towards computer use. This instrument utilized a single subscale on general self-efficacy. The School Counselor Computer Competency Scale was designed by the researcher to assess school counselors' knowledge, skills, and use of computer technology. An item analysis performed to provide initial reliability data on the instrument yielded two factors: computer specific knowledge and skills.

Each of the five scales constituted a dependent measure that was quantified by summing the responses of the items associated with the specified scale. Questions requiring score reversal were adjusted prior to summing. In order to examine the change of each scale as a result of the treatment, the initial scale score was subtracted from the final scale score to create a difference score for each scale. The resulting difference scores for the five dependent measures each constituted a factor that was used as a dependent variable in the analysis. The analysis was a between groups design on the independent variable, which contained two levels, control and treatment.

Data Analysis

Multiple Comparisons

The primary analysis conducted to determine if a difference existed between the treatment and control groups used a 2 (Group) x 5 (Factors) MANOVA utilizing the Wilks Lambda test statistic. A criterion p-value of .05 was used to determine the overall significance of the test. Due to missing data on certain sections of collected surveys, not all 72 surveys could be included in the following analysis. There were a total of 67 surveys that were assessed, including 33 control group participants and 34 treatment group participants. The results of the test showed Wilks Lambda = .2052, F(5, 61) = 47.252, p < .0001. The results of the MANOVA are provided in Table 4-1.

Table 4-1
Multivariate Analysis of Variance

	Wilks Lambda	df 1	df 2	F-Value	p-value
Intercept	.199778	5	61	48.867	< .0001
Group	.205205	5	61	47.252	<.0001

Given the significant multivariate test, each of the dependent variables was analyzed using a univariate t-test to determine on which of these variables the groups significantly differed. Therefore, a Bonferroni technique was applied to control the family-wise error rate at an overall value of .05. Since there were five univariate comparisons, a criterion p-value of .01 was used to determine significance for each factor. Table 4-2 below shows the group mean differences and Table 4-3 shows the univariate t-test values for each of the five variables.

Table 4-2
Control Group Means and Distributions

Variable	Mean 1	Valid N 1	Std. Dev. 1	-95.00%	+95.00%
CA-D	0.545455	33	3.012	-0.5223	1.6132
U-D	-0.24242	33	2.772	-1.2257	0.7408
SKILL-D	0.030303	33	1.895	-0.6418	0.7024
KNOWL-D	0.424242	33	3.132	-0.6866	1.5350
SEF-D	0.757576	33	5.226	-1.0956	2.6107

Treatment Group Means and Distributions

Variable	Mean 2	Valid N 2	Std. Dev. 2	-95.00%	+95.00%
CA-D	3.38235	34	3.717	2.0852	4.6794
U-D	1.11765	34	2.579	0.2177	2.0175
SKILL-D	10.0588	34	3.609	8.7994	11.3182
KNOWL-D	5.64706	34	4.162	4.1947	7.0994
SEF-D	3.02941	34	6.322	0.8235	5.2352

Table 4-3
Univariate T-tests on Factors: Group

Variable	df	t-value	p-value	Cohen's d
CA-D	65	**-3.4263**	**0.001065**	**.778**
U-D	65	-2.0796	0.041513	.489
SKILL-D	65	**-14.174**	**0.000000**	**1.72**
KNOWL-D	65	**-5.7896**	**0.000000**	**1.15**
SEF-D	65	-1.6006	0.114325	.380

Key: Group 1- Control Group
Group 2- Treatment Group
CA-D: Comfort/Anxiety Difference
U-D: Usefulness Difference
SKILL-D: Skill Difference
KNOWL-D: Knowledge Difference
SEF-D: Self-efficacy Difference

An important consideration is that the control group demonstrated no significant changes between the pretest and posttest on all five factors. Ninety-five percent confidence intervals for the difference scores of the control group all contained zero within the confidence interval, validating the assertion that changes in these constructs did not occur. The confidence intervals constructed were equivalent to conducting one-sample t-tests; primarily, testing the hypothesis that the mean differences on each of the factors for subjects in the control group was equal to zero.

A further consideration was to determine if additional variables such as gender or school level had any significant influence upon the treatment effects. Therefore, two additional tests examining the influence of these additional variables and the resulting interactions were conducted.

One of the multiple comparisons conducted used a 2 (Group) x 2 (Gender) x 5 (Factors) MANOVA using a Wilks Lambda test statistic. This analysis was used to answer the questions of whether there was an interaction between groups and gender or if there was a main gender effect. A criterion p-value of .05 was used on all tests to determine statistical significance. The results of this test are shown in Table 4-4.

Table 4-4
Multivariate Tests of Significance for Gender

Effect	**Test**	**Value**	**F**	**Effect df**	**Error df**	**p**
Group	Wilks	.281	30.16	5	59	< .001
Gender	Wilks	.931	.866	5	59	.509
Group x Gender	Wilks	.953	.578	5	59	.716

Significance at the .05 level

A second multiple comparison used a 2 (Group) x 3 (School Level) x 5 (Factors) MANOVA using a Wilks Lambda test statistic. This analysis was used to answer the questions of whether there was an interaction between groups and school level or if there was a main school level effect. A criterion p-value of .05 was also used to determine overall significance as shown in Table 4-5. The data collected included only three school levels, elementary, middle, and high school. Three surveys were eliminated from this particular analysis due to overlapping school levels and thus accounting for the decreases in the degrees of freedom.

Table 4-5
Multivariate Tests of Significance for School Level

Effect	**Test**	**Value**	**F**	**Effect df**	**Error df**	**p**
Group	Wilks	.232	35.56	5	54	< .001
School Level	Wilks	.845	.947	10	108	.493
Group x Level	Wilks	.945	.304	10	108	.978

Significance at the .05 level

Hypotheses

Eight hypotheses were investigated in this study. The first hypothesis examined if there was an overall treatment effect experienced by the workshop participants. The next five hypotheses determined on which of the specific factors any differences occurred.

The final two hypotheses considered the potential interaction and main effects that the additional independent variables of gender and school level had upon the groups.

Overall Treatment Effect

To determine if the workshop had an overall effect upon the participants, responses from the initial and final surveys were assigned to one of five established factors. Each factor was derived from a difference score using the pretest and posttest data from each participant in the study. These factors were used to test the following null hypothesis.

> H_{01}: There will be no significant difference (.05 level) between E_1 and E_2 groups across all of the established factors, as measured by the overall survey.

To test this hypothesis, a multivariate analysis of variance (MANOVA) technique was used. The results of the test, provided in Table 4-1, showed Wilks Lambda =.2052, $F(5, 61) = 47.252$, $p < .0001$. Therefore, the null hypothesis was rejected in favor of the alternative hypothesis. The conclusion of this test was that a difference does exist between the control group and the treatment group on at least one of the five factors examined.

School Counselor Computer Skills

To investigate the effects of treatment on computer skills of school counselors, results of the School Counselor Computer Competency Scale (SCCCS) were analyzed. This four-item sub-scale measures a participants' ability to use specific computer skills. Higher scores indicate more familiarity with a certain computer skill than lower scores. The results attained were used to test the stated following null hypothesis.

H_{02}: There will be no significant difference (.01 level) between E_1 and E_2 groups on counselor technology skills, as measured by the skills subscale of the School Counselor Computer Competency Scale.

A univariate t-test was performed and the results are found in Table 4-3. The t-tests and the group effect for computer skills showed $\underline{t}(65) = -14.17$, $\underline{p} < .00001$. The null hypothesis was rejected in favor of the alternative hypothesis. Cohen's d calculated the effect size to be 1.72. The conclusion was that a very large difference exists between the two groups on the skills subscale of the School Counselor Computer Competency Scale.

The descriptive statistics for pretest and posttest means found in Table 4-6 showed that the difference between the groups and the very large effect size was attributed to increases in the posttest scores for the treatment group.

Table 4-6
Descriptive Statistics for Computer Skills

Computer Skills	Pretest Means	-95.00% Interval	+95.00% Interval	Posttest Means	-95.00% Interval	+95.00% Interval
Group 1	7.18	6.20	8.16	7.21	6.25	8.17
Group 2	6.29	5.36	7.22	16.35	15.26	17.44

Key: Group 1- Control Group
Group 2- Treatment Group

School Counselor Computer Knowledge

To investigate the effects of the treatment on computer knowledge by school counselors, results of the School Counselor Computer Competency Scale (SCCCS) were analyzed. This five-item subscale measured participants' knowledge and understanding of how to utilize specific computer technology in the role as a school counselor. Higher scores indicate more knowledge of how to utilize a particular computer skill than lower scores. The results from the study were used to test the following null hypothesis.

H_{03}: There will be no significant difference (.01 level) between E_1 and E_2 groups on counselor technology knowledge, as measured by the knowledge subscale of the School Counselor Computer Competency Scale.

A univariate t-test was performed and the results are found in Table 4-3. The t-tests and the group effect for computer knowledge showed $t(65) = -5.789$, $p < .00001$. The null hypothesis was rejected in favor of the alternative hypothesis. Cohen's d calculated the effect size to be 1.15. The conclusion was that a very large difference exists between the two groups on the knowledge subscale of the School Counselor Computer Competency Scale.

The descriptive statistics for pretest and posttest means found in Table 4-7 showed that the difference between the groups and the very large effect size is attributed to increases in the posttest scores for the treatment group.

Table 4-7
Descriptive Statistics for Computer Knowledge

Computer Skills	Pretest Means	-95.00% Interval	+95.00% Interval	Posttest Means	-95.00% Interval	+95.00% Interval
Group 1	18.60	16.97	20.24	19.03	17.54	20.51
Group 2	16.23	14.45	18.01	21.88	20.75	23.01

Key: Group 1- Control Group
Group 2- Treatment Group

School Counselor Perceived Computer Usefulness

The usefulness of computer technology was measured by examining the results of the Attitudes Towards Computer Technologies Survey (ACT). This ACT sub-scale contains 11 items that determine the level of participants' perceived usefulness of computer technology. The results from the study were used to test the following null hypothesis.

H_{04}: There will be no significant difference (.01 level) between E_1 and E_2 groups on the usefulness of computer technology, as measured by the usefulness subscale of Attitudes Toward Computer Technologies.

A univariate t-test was performed and the results are found in Table 4-3. As mentioned previously, a Bonferroni technique was applied to control the family-wise error rate at an overall value of .05. Since there were five univariate comparisons, a criterion p-value of .01 was used to determine significance for each factor. The results showed that the t-tests and the group effect for computer knowledge were $t(65) = -2.079$, $p = .0415$. As a result, the decision was to fail to reject the null hypothesis. The conclusion was no significant difference existed between the two groups on the usefulness subscale of Attitudes Toward Computer Technologies.

The descriptive statistics for pretest and posttest means found in Table 4-8 showed that no meaningful changes occurred to either of the groups over the course of the study.

Table 4-8
Descriptive Statistics for Computer Usefulness

Computer Skills	Pretest Means	-95.00% Interval	+95.00% Interval	Posttest Means	-95.00% Interval	+95.00% Interval
Group 1	40.30	38.89	41.70	40.06	38.73	41.38
Group 2	40.29	38.81	41.77	41.41	40.04	42.78

Key: Group 1- Control Group
Group 2- Treatment Group

School Counselor Comfort/Anxiety Towards Computers

To investigate the effects of comfort/anxiety towards computer technology, results from the Attitudes Toward Computer Technologies (ACT) were analyzed. This 8-item sub-scale measures a participants' comfort/anxiety with computer technologies. The results attained from this instrument were used to test the stated following null hypothesis.

> H_{05}: There will be no significant difference (.01 level) between E_1 and E_2 groups on counselor comfort/anxiety towards computer technology, as measured by the Attitudes Toward Computer Technologies subscale.

A univariate t-test was performed and the results are found in Table 4-3. The t-tests and the group effect for computer skills showed $t(65) = -3.42$, $p = .0011$. The null hypothesis was rejected in favor of the alternative hypothesis. Cohen's d calculated the effect size to be 0.778. The conclusion was that a large difference existed between the two groups on the comfort/anxiety subscale.

The descriptive statistics for pretest and posttest means found in Table 4-9 showed that the difference between the groups and the large effect size was attributed to increases in the posttest scores for the treatment group.

Table 4-9
Descriptive Statistics for Computer Comfort/Anxiety

Computer Skills	Pre-test Means	-95.00% Interval	+95.00% Interval	Post-test Means	-95.00% Interval	+95.00% Interval
Group 1	22.66	20.69	24.64	23.21	21.45	24.96
Group 2	21.82	19.55	24.09	25.20	23.50	26.90

Key: Group 1- Control Group
Group 2- Treatment Group

School Counselor Perceived Self-efficacy

Self-efficacy was examined in this study by analyzing the results of the General Self-efficacy Scale. This scale assesses a person's willingness to initiate behavior, complete a behavior, and persist in the face of adversity. The results attained were used to test the stated following null hypothesis.

H_{06}: There will be no significant difference (.01 level) between E1 and E2 groups on self-efficacy, as measured by the General Self-efficacy Scale.

A univariate t-test was performed and the results are found in Table 4-3. The t-tests and the group effect for self-efficacy showed $\underline{t}(65) = -1.6006$, $\underline{p} = 0.1143$. As a result, the decision was to fail to reject the null hypothesis. The conclusion was no significant difference existed between the two groups on the General Self-efficacy Scale.

The descriptive statistics for pretest and posttest means found in Table 4-10 showed that there were no significant differences between the groups in the changes that occurred over the course of the study.

Table 4-10
Descriptive Statistics for Self-efficacy

Computer Skills	Pre-test Means	-95.00% Interval	+95.00% Interval	Post-test Means	-95.00% Interval	+95.00% Interval
Group 1	70.06	66.91	73.20	70.81	68.15	73.47
Group 2	68.29	65.36	71.22	71.32	68.11	74.52

Key: Group 1- Control Group
Group 2- Treatment Group

Gender

To determine the potential effects of gender upon the treatment, a follow-up multivariate analysis of variance (MANOVA) was conducted across all five factors to determine if gender could be considered a moderating variable. The following two related hypothesis were tested.

H_{07A}: There will be no significant group by gender interaction (.05 level) between E_1 and E_2 groups across all of the established factors, as measured by the overall survey.

H_{07B}: There will be no significant main effect for gender (.05 level) between E_1 and E_2 groups across all of the established factors, as measured by the overall survey.

The results of these analyses are found in Table 4-4. The follow-up MANOVA showed that the Wilks Lambda statistic for Gender = .931, F(5,59) = .866, p = .509; and that the Wilks Lambda statistic for the Group X Gender Interaction = .953, F(5, 59) = .578, p = .716. The conclusion in each case was to fail to reject the null hypothesis. Interpretation concluded that gender had no significant impact upon the treatment.

School Level

To determine the potential effects of the counselor's school level upon the treatment, a follow-up multivariate analysis of variance (MANOVA) was conducted across all five factors to determine if school level could be considered a moderating variable. Two related hypotheses were tested.

> H_{08A}: There will be no significant group by school level interaction (.05 level) between E_1 and E_2 groups across all of the established factors, as measured by the overall survey.
>
> H_{08B}: There will be no significant main effect for school level (.05 level) between E_1 and E_2 groups across all of the established factors, as measured by the overall survey.

The results of these analyses are found in Table 4-5 and show that the Wilks Lambda statistic for School Level = .845, F(10, 108) = .947, p = .493; and that the Wilks Lambda statistic for the Group X Gender Interaction = .945, F(10, 108) = ..304, p = .978. The conclusion in each case was to fail to reject the null hypothesis. The conclusion that was interpreted from the collected data was that school level had no significant impact upon the treatment.

Summary of Results

The following were major conclusions that were interpreted from the results. A significant overall effect was identified that is attributable to participation in the computer-training workshop. Specifically, participants in the workshop demonstrated very large improvements in the areas of computer based skills and knowledge and large improvements were shown in comfort with using computer technologies. However, no major changes were found in these participants' perceptions of the usefulness of computer technology or in general self-efficacy. Control group subjects who did not take part in the workshop showed no differences across time on any of the five factors examined. Finally, neither the inclusion of gender nor the school level of the counselors was shown to have any significant influence upon the treatment. Therefore the effects experienced by the workshop participants were all considered to be attributable to the treatment.

CHAPTER 5
SUMMARY AND CONCLUSIONS

Summary

The purpose of this study was to examine the effects that computer technology trainings would have on school counselors. More specifically, the impact it would have on computer knowledge, skills and attitudes, along with levels of self-efficacy. School counselors serving grade levels K through 12 participated in professional computer training interventions and learned how applied technology could be utilized in their work with students, parents, and other counselors.

A total of 72 school counselors participated in this study. Thirty-six school counselors participated in the treatment and 36 school counselors took part in the control group. The workshop training consisted primarily of four computer technology areas (a) electronic mail, (b) Internet searches, (c) Power Point presentations, and (d) Web page design.

School counselors that participated in the treatment were compared to those school counselors in the control groups on five dependent variables. Two variables, computer skills and computer knowledge, were both measured by the School Counselor Computer Competency Scale. This scale consisted of a total of 16 items that focused on various computer technology topics, including email, Internet, Power Point, and Web pages. Questions 1 through 11 measured computer knowledge and skills and used a Likert scale with a 5-point response format, with descriptors ranging from strongly disagree to strongly agree. Due to an item analysis performed on this scale, frequency items 1 through 5 were excluded from the statistical analysis in Chapter 4 because of poor reliability of responses. However, these items were discussed in more detail in the Instrument section of Chapter 3.

Attitudes Toward Computer Technologies-Form A (ACT) measured the third and fourth dependent variables, computer comfort/anxiety and computer usefulness. School counselors were asked to answer the 19-item questionnaire used to access perceived usefulness and comfort/anxiety with computer technologies. Questions 1 through 8 measured school counselors' comfort/anxiety towards computer technology. Questionnaire items 9 through 19 assessed school counselors' perceived usefulness of computer technologies. A Likert scale with a 4-point response format was used containing descriptors ranging from strongly disagree to strongly agree.

The fifth dependent variable, self-efficacy, was measured by the General Self-efficacy Scale. This scale consisted of 17 items used to assess a person's general self-efficacy. The purpose of this 5-point Likert-type questionnaire was to examine a person's willingness to initiate behavior, complete a behavior, and persistence in the face of adversity. The gender and grade levels for each participant were also recorded. This information was analyzed to determine any significant interactions between the control and treatment groups as measured by all three assessment instruments.

A 2 (Group) x 5 (Factors) MANOVA was performed using a Wilks Lambda test statistic to determine whether the control and treatment groups differed on the overall computer technology constructs. The Wilks Lambda indicated a significant difference between groups on the overall computer technology survey $\underline{F}\ (5,61) = .205$, $\underline{p} < .001$.

Descriptive statistics for group means and group mean differences were performed to target any significant changes between the pre-test and post-test on all five variables. A Bonferroni technique was also applied to control family-wise error rate at an overall value of .05. Due to conducting five univariate comparisons, a criterion p-value of .01 was used to determine significance for each factor.

Conclusions

The outcomes of the study were mixed in that some of the variables showed a significant difference, while others did not. Results indicated that the school counseling training intervention was not effective in changing school counselors' perception of self-efficacy or perceptions of the usefulness of computer technologies. However, there were significant differences in computer knowledge, skills, and comfort anxiety levels after participants experienced the treatment intervention. The conclusions were explored further in relation to each of the dependent variables.

School Counselor Computer Skills

The univariate t-test showed significant differences between the computer skills developed by the school counselors participating in the treatment and control group. The descriptive statistics for pretest and posttest means shows that the difference between the groups and the large effect size is ascribed to increases in the posttest scores for the treatment group. Therefore, it was concluded from the results that the computer training intervention did significantly impact the computer skills of school counselors.

School Counselor Computer Knowledge

A univariate t-test was performed in order to examine the differences between the computer knowledge attained by school counselors in the treatment and control groups.

The results of the study showed, based on the descriptive statistics for pretest and posttest means, that there were significant differences between the two groups on the Counselor Computer knowledge subscale. The very large effect size is attributed to increases in the posttest scores for the treatment group. Therefore, it was concluded that the treatment intervention significantly impacted the computer knowledge attained by school counselors.

School Counselor Perceived Usefulness of Computers

The univariate t-test revealed no significant difference between the perceived usefulness of computer technologies between treatment and control groups. School counselors in the treatment group perceived the usefulness of computers similar to those in the control group. The conclusion was no significant difference existed between the two groups on the Attitudes Toward Computer Technologies instrument. Changes did not occur to either of the groups over the duration of the study.

School Counselor Comfort/Anxiety Towards Computers

The univariate t-test performed on school counselors' comfort/anxiety towards computer technology showed significant differences between treatment and control groups. Additionally, there was a large effect size based on the difference that existed between the two groups on the comfort/anxiety subscale. The descriptive statistics revealed that the difference between the groups and the large effect size was the result of increases in the posttest scores for the treatment group. Based on these conclusions, the null hypothesis was rejected because participating in the computer training intervention did impact school counselors' level of comfort/anxiety.

School Counselor Perceived Self-efficacy

A univariate t-test and descriptive statistics were used to examine perceptions of school counselors' self-efficacy in treatment and control groups. Based on the analyses, no significant difference existed between the two groups on the Self-efficacy Scale. It was concluded that no meaningful changes occurred to either of the groups over the course of the study and as a result, the decision was to fail to reject the null hypothesis.

Gender of School Counselors

A follow-up MANOVA was conducted across all five factors to examine the potential effects of gender upon the treatment. The conclusion in each case was that a counselor being a male or female had no significant impact upon the treatment. Therefore, the conclusion was that the gender of school counselors was not a factor in this study.

School Level of Counselors

A follow-up MANOVA was used to examine the potential effects of the counselors' school level upon treatment. The MANOVA was conducted across all five factors to determine if school level, elementary, middle, or high, could have any effect between groups. The results showed that the school level of each counselor had no significant impact and was not a factor upon the treatment.

Discussion

Results of this study suggested that school counselors were interested in how computer technology could be utilized in their school programs. Results also suggested that there were certain factors that could impact the findings of treatment and outcome measures.

Throughout the intervention counselors experienced successes while engaging in specific computer skills, such as creating group emails, Web pages, Internet searches, and Power Point presentations. These skills increased greatly due to the exposure and direct instruction within the workshop.

There was a significant treatment effect with regard to school counselors' computer knowledge. Computer knowledge greatly increased following the computer training workshop. This may be due to the training on how computer use could be utilized in order to assist counselors in helping others. Not only did counselors practice computer skills, they also understood the way these skills could be implemented for a more successful school program.

It was interesting to note that there were no significant differences in perceived usefulness of computer technologies between the control and treatment groups. This may be attributed to school counselors' general understanding of the importance of computer technology, but not necessarily utilizing it in their programs. For instance, school counselors may understand that technology can assist counselors but may not know exactly how it can be implemented. Specific examples include utilizing e-mail to communicate with parents, counselors, or other schools. Utilizing Internet searches to quickly locate scholarship opportunities, standardized testing sites, or information on grief/loss support groups are more ways that technology can prove its usefulness.

School counselors in the treatment group showed an increase in comfort in using computers based on participating in the computer training. This increase may be due to the experience these counselors gained in practicing and completing various computer tasks. The hands-on workshop may have provided participants the opportunities to partake in skills that otherwise were intimidating or seemed out of their expertise.

The workshop intervention did not appear to significantly impact school counselors' level of self-efficacy. School counselors' perceptions of being able to successfully fulfill these tasks were not increased from pretest to posttest. The type of questions that the General Self-efficacy Scale provided may have contributed to the consistency of the responses between pre and posttest. This instrument was not specific to computer technology, but rather a general view of how one would handle situations generally in life.

It was noted that there was no impact upon the treatment based on school counselors' gender or school level. This may be due to the limited number of participants in the study. There were significantly more females in the study than males, however that discrepancy is also consistent throughout the school counseling profession. The scores for school counselors did not significantly change based on their school level. Differences in scores were not attributed to elementary, middle, or high school level. A difference may have been more noticeable if the sample size was much larger, however those differences were not found in this study.

Limitations

One limitation involved the use of the General Self-efficacy Scale. This was a limitation in that this instrument measured only general behaviors, rather than computer specific behaviors. The results from the study suggested that there were no significant differences in levels of self-efficacy between groups on pre and post measures. However, these results were based on general self-efficacy items and not items relating to a specific domain, such as computer technologies. Although this instrument was a reliable measure, it was limiting in the information it could provide for this particular study.

One sub-scale from the School Counselor Computer Competency instrument intended to measure school counselors' actual usage of specific computer technologies before and after the treatment intervention. However, based on the results of an item analysis, it was determined that the five-item sub-scale contained poor and unreliable estimates and could not be included in the statistical analysis of the study. Not having a reliable measure to examine computer use before and after the study was another limitation. The surveys from counselors provided valuable data but due to lack of reliability, the information could not be interpreted.

The duration of the treatment intervention may have been another limitation of this study. The one-day computer training allowed school counselors to explore ways to implement four specific computer technologies into their school counseling programs. This training seemed to be effective in increasing counselors' computer knowledge, skills, and comfort level; however, the brevity of the intervention may have been a factor in not providing more opportunities to master skills which may be linked to self-efficacy. Some counselors may have had a difficult time learning four computer skills in a one-day training and may benefit from four separate workshop sessions. This could have allowed more practice time at their school site to learn each skill. Unfortunately, it needs to be noted that conducting half-day, multiple trainings can be unrealistic for counselors who have a difficult time leaving campus.

In review, there were several possible limitations. The limitations included the lack of a domain-specific self-efficacy measure focusing primarily on computer technologies, the lack of data regarding initial and final computer use, and the one-day length of the intervention. Some of these limitations were anticipated and every effort was taken to minimize the effects on the results of the study.

Implications

The results from this study play a part in adding information to the limited data available on school counselors and the impact of computer technology. The results help to uncover ways school counselors are affected by learning practical computer skills and knowledge in regard to computer comfort/anxiety, knowledge, and self-efficacy. In examining a computer training intervention for school counselors, practices in training for other helping professions can be better explored.

Shown in the findings a one-day computer workshop intervention for school counselors can affect changes in computer skills and knowledge. Due to increasingly higher ratios of students to counselors, there is a need for technological advances to create more efficient and effective school counseling programs. It is important for school counselors to be able to utilize advancing technology to retrieve and disseminate current information quickly to help students, parents, and teachers. The results of this study confirm that school counselors will significantly increase their computer skills and knowledge when given the opportunity to participate in computer training workshops. There is a need for additional in-service programs dealing with computer technology in order for school counselors to take advantage of these benefits.

An additional implication is found in the results of the Attitudes Toward Computer Technologies sub-scale measuring comfort/anxiety. The results suggested that school counselors showed an increase in their comfort level following their participation in the training intervention. While school counselors may be interested in learning about computer technology, some still have anxiety and reservations about actually using them. The computer training workshop provided participants with a hands-on approach while instructors modeled step-by-step skills throughout the training. The impact of computer trainings will be better realized through hands-on, interactive workshops that may help to reduce stress and increase comfort by preparing counselors to implement practical skills and knowledge into their guidance programs.

Other Findings

Additional information was requested from participants in the treatment group based on the experiences in the computer training intervention. Four areas of interest were examined. These areas focused on finding out what school counselors perceived as the most helpful computer skill, the least helpful computer skill, ranking different teaching methods, and computer skills each counselor intended to utilize in their school program.

Based on the follow-up survey, participants in the treatment group expressed that learning about Power Point and Web pages were the most helpful computer skills they learned in the training intervention. Even though most of the counselors heard about these technologies, they had never experienced using them.

Familiarity may have played a part in the two skills that were considered the least helpful in the computer training. Participants in the training considered electronic mail and Internet searches not as helpful as the other skills learned. However, the majority of responses claimed, “none were least helpful” so an accurate account of these responses could not be calculated.

School counselors ranked the teaching methods used in the computer training intervention. The four instructional methods included (a) watching computer demonstrations, (b) reading the manual guide, (c) having practice time on the computer, and (d) modeling the instructor step-by-step. Participants were asked to rank each method as to how much assistance it provided them in learning computer skills. The results indicated that most school counselors in the treatment group had the most success with having an instructor model step-by-step procedures. However, the majority of participants ranked the manual guide as the teaching method giving the least amount of assistance.

Another area on the survey inquired about what computer skill(s) each counselor intended to utilize in their guidance program. The feedback from school counselors following the intervention indicated that the majority of them intended to utilize all four skills practiced in the computer training. However, three months following the intervention, a follow-up email was sent to each participant in the treatment group asking the same question. Participants revealed that even though they had every intention of using all four skills, the majority of them only utilized electronic mail and Internet searches regularly. Several counselors did experiment with creating Power Point presentations, while some expressed satisfaction in presenting with Power Point to parents and faculty for FCAT and scholarship information. Only two counselors successfully created Web pages following the training, and one of them had a difficult time getting it uploaded onto her school's web site.

It is interesting to note that on the feedback survey most counselors felt that Web page design and Power Point were the most helpful skills learned, however these two skills were the least implemented. Issues such as time restraints, lack of technology support, and limited computer technology resources were possible contributions to the difficulties counselors had experienced.

Recommendations

One recommendation for this study would be to include an extended intervention with a follow-up component. An extended intervention training could consist of four separate one-day sessions touching on each of the four computer technology skills. This may provide school counselors more time to practice and implement one skill before learning another. This would also allow counselors time to return to their school sites to integrate the new skill into practice and provide feedback on their experiences. However, counselors' time away from school needs to be realistically explored.

Placing counselors in pairs or small groups throughout the trainings might be another recommendation to this intervention. Allowing participants to gain feedback from partners and work cooperatively in groups can be another area to be explored in looking at the impact of this intervention.

Another recommendation would be to provide a reliable pre-survey instrument to measure the number of computer skills each counselor was capable of using before and after the study. This information could be utilized to group participants into different skill levels. In addition, looking at the exposure each counselor had to computer technology in his or her school counseling program may prove to be useful information.

While this study suggests that school counselors increase their computer skills, knowledge, and comfort level by engaging in computer trainings, it would be interesting to expand the study to include learning styles. Different learning modalities could be examined by allowing some school counselors to review a manual on computer technology, other counselors attend a seminar on computer technology, and still others participate in an interactive computer workshop. Differences could then be measured in terms of the ways people learn, retain, and utilize information they receive.

A final recommendation is to continue to follow current trends in technology. Technology is constantly changing and there are new computer advances every year. The key is to find practical ways for school counselors to utilize these advancements to create more efficient and effective school guidance programs.

APPENDIX A
WORKSHOP FLYER

Topic: Computer Skills for the School Counselor

(Each workshop is limited to 30 people due to the size of the computer lab)

Location: ELC, 5th Floor- Computer Lab
Time: 8:00 a.m.- 3:00 p.m.

This is an all-day workshop geared for school counselors that have basic computer knowledge and would like to learn how to do the following functions on the computer.

1. **E-mail-** learn how to retrieve messages, send attachments, and set up a distribution list

2. **Surfing the Internet-** explore various websites that provide useful information for school counselors

3. **Web page Design-** learn how to set up a simple guidance web page that can become part of your school's Web site

4. **Power Point-** learn the basics of Power Point by experimenting with formats, fonts, and graphics to create a Power Point presentation. Bring an outline or idea of a presentation that you would like to make into a Power Point to use at your school.

Workshop Registration

Name: ______________________________ School ________________________________

I would like to register for the following workshop:

Computer Skills for the School Counselor- 8:00 a.m.-3:00 p.m.

Please select the date you wish to attend: _____ April 3, 2002

_____ April 5, 2002

_____ Cannot attend either date at this time

APPENDIX B
CONSENT LETTERS FOR PARTICIPATION

Adult Consent for Own Participation

My name is Stacy Van Horn and I am currently the school counselor at Dover Shores Elementary School in Orange County, FL. I am also a doctoral student at the University of Florida working under the supervision of Dr. Robert Myrick. I am conducting a study examining the effectiveness of a computer-training workshop for school counselors. The purpose of this study is to gain a better understanding of the effects of a computer workshop on a school counselor's self-efficacy (confidence in one's abilities), along with counselor knowledge, skills, and attitude regarding computer technology.

If you decide to participate in this study, your involvement will include a seven-hour computer-training workshop in the computer lab at The Educational Leadership Center, Orlando, FL. You will be asked to complete a pretest that will take approximately 5-10 minutes to complete prior to the training. Two weeks following the workshop a posttest will be sent to you through Orange County Public School's courier system. You do not have to answer any question that you don't want to answer. All individual information, including counselor names and schools, will be number coded and kept strictly confidential to the extent provided by law. There will be no compensation for your participation; however, the benefits would include increased knowledge of how to use computer technology and how this technology can aid in the role of a school counselor. There are no anticipated risks. Your participation is completely voluntary and you will be free to refuse or stop at any time without penalty.

If you have any questions about this study, please feel free to contact:

Principal Investigator
Stacy Van Horn, Ed.S.
Dover Shores Elementary
1200 Gaston Foster Road
Orlando, Florida 32812
Phone: 407-249-6330 x236

Supervisor
Robert Myrick, Ph.D.
University of Florida
1215 Norman Hall
Gainesville, Florida 32611-7046
Phone: 352-392-0731 x233

Any questions about research participants' rights may be directed to the UFIRB office, University of Florida, Box 112250, Gainesville, FL 32611-2250; (352) 392-0433.

I have read the above information and voluntarily agree to participate in this study.

Counselor ________________________________ Date ___________

Principal Investigator _________________________ Date ___________

Adult Consent for Own Participation

My name is Stacy Van Horn and I am currently the school counselor at Dover Shores Elementary School in Orange County, FL. I am also a doctoral student at the University of Florida working under the supervision of Dr. Robert Myrick. I am conducting a study examining the effectiveness of a computer-training workshop for school counselors. The purpose of this study is to gain a better understanding of the effects of a computer workshop on a school counselor's self-efficacy (confidence in one's abilities), along with counselor knowledge, skills, and attitude regarding computer technology.

If you decide to participate in this study, you will be asked to complete a pretest that will take approximately 5-10 minutes. Approximately two weeks later, the posttest will be sent to you through Orange County Public School's courier system. You do not have to answer any question that you don't want to answer. All individual information, including counselor names and schools, will be number coded and kept strictly confidential to the extent provided by law. There will be no compensation for your participation and there are no anticipated risks. Your participation is completely voluntary and you will be free to refuse or stop at any time without penalty.

If you have any questions about this study, please feel free to contact:

Principal Investigator	Supervisor
Stacy Van Horn, Ed.S.	Robert Myrick, Ph.D.
Dover Shores Elementary	University of Florida
1200 Gaston Foster Road	1215 Norman Hall
Orlando, Florida 32812	Gainesville, Florida 32611-7046
Phone: 407-249-6330 x236	Phone: 352-392-0731 x233

Any questions about research participants' rights may be directed to the UFIRB office, University of Florida, Box 112250, Gainesville, FL 32611-2250; (352) 392-0433.

I have read the above information and voluntarily agree to participate in this study.

Counselor ________________________________ Date __________

Principal Investigator _________________________ Date __________

APPENDIX C
TRAINING FACILITATOR'S MANUAL

TRAINING FACILITATOR'S MANUAL

The following is to be read by the researcher prior to the start of the workshop training.

Say, **"Hello, my name is Stacy Van Horn. I am currently the school counselor at Dover Shores Elementary School in Orange County, Florida. I am also a doctoral candidate at the University of Florida in Gainesville. Today's computer training workshop is part of my dissertation study. I will be asking each of you to review and fill out the informed consent form and pretest survey. The survey will take approximately 10-15 minutes to complete. I appreciate all of your help in allowing me to collect data that can benefit the school counseling profession. The responses you provide will be kept confidential and only I will see your individual answers. If you choose to take part, you may stop at any time and you will not have to answer any question(s) you do not want to.**

Allow participants time to complete the pretest surveys and collect them prior to beginning the training workshop.

Opening Statement:

Say, **"Please look over the following agenda for today's computer training workshop. We are going to spend the day learning four different computer technology skills. These skills include utilizing electronic mail, conducting Internet searches, building Web pages, and creating Power Point presentations. We will also review how each of these skills can be utilized to assist school counselors in becoming more effective and efficient.**

COUNSELOR COMPUTER TRAINING WORKSHOP AGENDA

PRETEST SURVEY	8:00-8:20
E-MAIL TRAINING	8:20-9:10
EXPLORING WEB SITE TRAINING	9:10-10:10
BREAK	10:10-10:20
CREATING A WEB PAGE	10:20-11:45
LUNCH	11:45-12:45
POWER POINT DESIGN	12:45-3:00

COMPUTER TOPIC ONE: ELECTRONIC MAIL

SECTION I: WHY ELECTRONIC MAIL FOR SCHOOL COUNSELORS?

Electronic mail or e-mail is such an enormous communication tool. It has altered the way people retrieve and disseminate information. There are so many ways that school counselors can benefit from utilizing e-mail in their work. For instance, e-mail can provide counselors with an effective and efficient communication tool that can help fellow counselors, parents, students and administrators. More specifically, school counselors can use e-mail to:

- **Promote communication** between the guidance department and parents. E-mail can help counselors communicate with parents in a faster and more efficient manner. For example, a parent may inquire about a specific small group or other counseling intervention and a counselor could reply with a quick e-mail response. E-mail can save a counselor time and energy.

- **Provide support and feedback** to fellow counselors. With e-mail a counselor can quickly keep in contact with a new counselor. This support can be in the form of weekly e-mails to a new counselor in the county or someone that needs support in trying out a new counseling intervention. E-mail can provide a fast way to respond and give feedback to other counselors on guidance units or resources.

- **Promote advocacy** in the school counseling profession. E-mail can be used to educate and inform counselors about legislative changes and decisions that directly affect the profession. E-mail can be a powerful communication tool that can bring counselors together.

- **Communicate information** through group lists. Group lists can help to disseminate information to hundreds or thousands of counselors with a click of the mouse. For instance, e-mail can be used to send out messages to every counselor in the county advertising training opportunities, new resources, or certification changes. E-mail allows the exchange of information to be very quick and easy. It closes the gap between schools and distance is no longer a factor in attaining information.

SECTION II: POLLING YOUR AUDIENCE

It is important to quickly review with participants some computer skills using electronic mail. Some of the very basic e-mail skills include double clicking on the "Outlook" icon in order to open the program, double clicking on a message to open and read an e-mail, and choosing "Reply" or "Send" to return or create another e-mail message. After a quick review of the essentials of the Outlook program, move on to Section III to teach participants some more advanced skills, such as creating a distribution list of other counselors or teachers.

SECTION III: DISTRIBUTION LISTS

In using Outlook, the following are steps to forming a group list to send a single e-mail to multiple people.

1. From the Contacts section, click on the arrow next to the word "New" in the upper left hand corner. That drop down list contains a choice called "Distribution List." Click on that.
2. Give your new list a name. Something such as, "East elementary counselors." It can be anything to help you remember what it contains.
3. After you name your list, click on the bar named "Select Members." This brings up the master list of OCPS employees.
4. Either type the person's name or scroll down the big list until you find the person you want to add to your group list. When you find the person's name, click on it to highlight, and then click on "Members" (to the right of the master list.) Do the same procedure for each person you want to add to your group list.
5. After everyone in your group is listed in the box on the right side of the screen, click on "OK" at the bottom.
6. Then click on "SAVE" and "CLOSE." This has established a group in the "NEW CONTACTS" section of Outlook.
7. Now, go to the "INBOX" section of Outlook and get ready to send a new message to the group.
8. Once you have the message screen showing, click on the "New" bar in the upper left hand corner. This brings up a new message for you to send.
9. Click on the word "To" (near where you normally type in a person's name). This brings up a screen showing all OCPS employees again. In the upper right hand corner of this screen is a box that probably says "Global Address List." Click on the small arrow (pointing down). The menu choices should include (at the bottom of the choice) the phrase "Contacts" appears. Be sure not to choose the "All Contacts" choice. Click on the word "Contacts."
10. The new screen displays everyone you have in your Contacts section of Outlook. Find the name you called your group (eg. "East Area Elementary Counselors").
11. Click on the "To" bar, moving the group list from the left side to the right side of this screen. Click on "Ok" at the bottom.
12. Type your message.
13. Click on "Send" to send it on its way.

SECTION IV: CHALLENGE ACTIVITY

The participants are given twenty minutes of practice time on their own to experiment with creating distribution lists and sending e-mail messages. All counselors are then challenged to return to their school sites and create distribution lists for various groups. Some group lists can include counselors in their department or nearby schools, various grade level teachers, or other county or school student support staff.

COMPUTER TOPIC TWO: EXPLORING WEBSITES

SECTION I: WHY SHOULD SCHOOL COUNSELORS SEARCH THE INTERNET?

The Internet is a tool to retrieve information on an enormous amount of topics. The Internet can be a valuable tool for school counselors in helping parents, faculty and students. More specifically, school counselors can use the Internet to do the following:

- **Retrieve information on career and college opportunities**. School counselors can use the Internet to explore career options and college information from their desks. For example, some colleges have virtual tours of their campuses on the their Internet sites which can help to educate students. The Internet also has considerable information about financial aid, scholarships, and grants. This information can ease the pressure for families and help them to understand that there are options for them in helping their child go to college.

- **Keep up with the latest research and trends**. The Internet can help school counselors locate new resources that can help in designing small or large groups. For instance, ASCA (American School Counseling Association) has a site on the Internet that can help counselors stay on top of the latest published books and guidance materials. Online journals are also available via the Internet. For example, the Journal of Technology in Counseling (http://jtc.colstate.edu) provides articles on aspects of practice, theory, research and professionalism related to technology and counselors.

- **Organize relevant sites** according to student and teacher needs. Internet sites containing resources and information can easily be book marked or placed under the "favorites" section to be quickly organized. For example, a career site can be saved under a student's name or e-mailed to them so they have easy access to that information. This information can be downloaded to a disk or printed out to share with others.

- **Search for anything and everything.** School counselors can search the Internet for anything, ranging from ADHD characteristics in children to counseling groups for adolescents on divorce. The Internet is a computer tool that can be used to locate information on so many topics that can help in the role as a school counselor. It can be a resource guide to locate services for families in need or a way for counselors to get additional training through community agencies.

SECTION II: ADD WEBSITES TO YOUR FAVORITES

The following steps will allow a computer user to store a website in their "Favorites" section. This is important in order to quickly return to a site at any later date in time.

1. Locate a website by plugging in the website address (eg. www.counseling.org) into the url rectangular space at the top of the screen and click on "Go."
2. Click on "Favorites" at the top of your screen.
3. Click on "Add."

4. Check to see if you want to change the title of the website or leave it the way it is, then click "Ok."
5. Your website is now saved in your "Favorites" section.
6. If you want to sort addresses alphabetically, right click on your mouse and click on "Sort by Name."
7. In order to check to if your website was added, simply click on "Favorites" at the top of the screen. All of the saved websites will appear.

SECTION III: USING SEARCH ENGINES

Search engines are ways that a computer user can plug in words or key phrases in order to locate websites containing topics on a desired subject matter. The following are some common search engines.

1. www.goggle.com
2. www.dogpile.com
3. www.altavista.com
4. www.yahoo.com
5. http://eden.cs.umass.edu/Govbot/

SECTION IV: SURFING THE WEB

The following are some examples of websites that can be beneficial to school counselors in a variety of areas. Some of the websites listed below are professional association sites, character education sites, college/career-related sites, parent and student sites, and general sites for school counselors.

- Professional Association Sites:
  1. www.schoolcounselor.org
     (American School Counselor Association website)
  2. www.counseling.org
     (American Counseling Association website)

- Character Education Sites:
  3. www.caringteachers.com
     (Resources on social skills, character education)
  4. www.goodcharacter.com
     (Excellent lesson plans for character education in schools)

- Study Skills Sites:
  5. www.indiana.edu/~iuepsyc/study.html
     (Contains helpful study skills)
  6. www.ucc.vt.edu/stdysk/checklis.html
     (Study skills checklist)

- College/ Career Sites:
  7. www.career.missouri.edu/holland
     (Explores interests and how they relate to careers; interactive site)

8. www.petersons.com
   (Information on colleges, scholarships, financial aid, and career guidance)
9. http://mtsu.edu/~studsk1/10tips.html
   (Ten tips you need to survive college)
10. http://collegeedge.com/
    (Assists students find the college based on their needs)
11. www.scholaraid.com
    (Free online scholarship directory)
12. www.facts.org
    (Florida's online gateway for college/career planning)

- Parents/Student Sites:
  13. www.abcparenting.com
      (Site for parents containing information on many child rearing concerns)
  14. www.discoveryschool.com
      (Homework helper site with many tools for parents)
  15. www.aacap.org/web/aacap/factsFam/
      (Fact sheets on many parenting concerns; available in English, French, and Spanish)
  16. www.bigchalk.com
      (Lessons for all grade levels; parenting suggestions and homework helper)

- General Sites for Counselors:
  17. http://teachers.net/mentors/counseling
      (Lesson plans for guidance, message board for networking)
  18. www.cyberguidance.net
      (Bob Turba's Cyber Guidance Office – has links to many other sites, forms, etc.)
  19. www.edweek.org
      (Education Week Magazine – clips of weekly articles about education)
  20. www.grohol.com
      (Dr. John Grohol covers all types of mental health issues, resources and support)
  21. www.kidshealth.org
      (Information on child topics ranging from stress to grieving)
  22. http://members.aol.com/AngriesOut
      (Information on anger for counselors, teachers, parents and students)
  23. www.servicelearningcommission.org
      (National site for service learning; provides many links to service learning)
  24. www.disciplinehelp.com
      (From the book *You Can Handle Them All*, lists discipline concerns and solutions)
  25. www.mindtools.com
      (How to get the most out of your time; links to many other sites)
  26. www.schoolexpress.com
      (Great site for activities, awards, worksheets, etc.)

SECTION V. CHALLENGE ACTIVITY

Each participant is to practice exploring the above web sites and navigate through the different links on each web page. Make sure to save those web sites of particular interest in your “FAVORITES” folder.

COMPUTER TOPIC THREE: CREATING A GUIDANCE WEB PAGE

SECTION I: WHY WEB PAGES FOR SCHOOL COUNSELORS?

Web sites are a valuable tool in the 21st century and school counselors need to utilize current computer technology in the role as school counselor. There are several benefits to having a guidance web page linked to your school's web site. For instance, a school counselor Web page can help define the role of the school counselor, promote accountability in the school counseling profession, and provide an assessable tool for communication. More specifically, school counselors can use a guidance Web page to:

- Promote the **different roles of a school counselor** through a guidance Web page. Many parents, as well as school personnel, are often unaware of the role of a school counselor. Define your profession to others by advertising what you want your role to be in your school. One way is to provide a guidance mission statement that you intend to follow and explain your goals. For example, provide an explanation of the ways you help students and teachers be successful, such as through consultations, coordinating school-wide prevention activities, small groups/classroom guidance units, etc… This information also provides accountability to others on the value of school counselors and the importance of the work a counselor performs in a school.

- Post a **Guidance Calendar** on your guidance Web site that reminds parents/students of important events such as Red Ribbon Week, Middle/High School visits, Honor Roll and other award presentation dates, FCAT/ SAT testing dates, Career Day, or deadlines for college admissions. This is an easy and convenient way for parents/students to access the guidance calendar after school hours or on the weekends. This information posted on a Web site can save counselors time and energy. For families without access to a home computer, invite parents to use the school's computer lab to print out updated calendar dates.

- **Provide links** to valuable tools for further information, such as the Guidance and Student Development Benchmarks. This link can provide parents and community members with information on career, social/personal and academic expectations for students in grades K-12. Other links can also be added to a guidance Web page to help both parents and teachers on a wide variety of topics (eg. Parenting tips, getting into college, preparing for the FCAT, drug/violence prevention…)

SECTION II: CREATING AND SAVING WEB PAGES

- Creating the Blank Web Page
  - Open the *Microsoft Word* Program by double clicking on the "WORD" icon.
  - Once the program opens, select VIEW from the menu and click on "WEB LAYOUT"

- Saving the Web Page
  - Select FILE from menu, and click on "SAVE AS".
  - Type in the location you want the file to be saved (the "SAVE IN" section).

- Type in the name of your Guidance Web page under "FILE NAME" and click and choose "WEB PAGE" (*.htm) to save as a Web page document.

SECTION III: THE LOOK OF THE WEB PAGE

- Creating Background Color
  - On the FORMAT menu, click on "BACKGROUND" and then select a color

- Modifying the Font
  - On the FORMAT menu, click on "FONT".
  - Search under the "FONT" box and scroll by clicking on the down arrow to view the various font styles.
  - Click to highlight the font you would like to preview and the font will be shown in the preview box.
  - When you are ready, click on a font for your Web page and click on the "OK" button at the bottom of the box.

- Modifying the Font Color, Size, and other Effects
  - On the FORMAT menu, click on "FONT".
  - Search under the "FONT COLOR" box and scroll by clicking on the arrow to view the various font colors. If you want more colors to choose from, then click on "MORE COLORS".
  - Click on the color you like and then click "OK" on the right hand corner.
  - On the next screen you can choose to click to alter font style, font size, or font effects. After you choose your preferences click "OK" close the page and lock in your selections.

- Capturing an Image from Clipart
  - Click on the area of your Web page that you want to place a graphic.
  - Then, on the INSERT toolbar, click on "PICTURE" (hold down) and then click on "CLIP ART".
  - Click once on a category and browse through the different clip art images.
  - Once you have a clip art selected for your Web page, click on that image and then click on the top icon to place it into your document.
  - You can now close or minimize the screen.

- Capturing a Graphic from the Internet
  - There are a tremendous number of Internet sites that provide free clipart, graphics and animation that can be captured and saved by computer users (but not for commercial use).
  - Three such Internet sites that contain clipart, graphics and animation for educators are http://www.teacherfiles.com/clip_art.htm, http://school.discovery.com/clipart/ and http://www.hoxie.org/clipart/clip52.htm.
  - Explore each of these Internet sites and search for interesting clipart and animation that can fit in your Guidance Web page.

  - Once you locate an image you would like to capture, simply right click on the image you want and select "SAVE PICTURE AS".
  - Then designate the location (at the workshop choose your floppy drive: A). Also, choose the word you wish to name the file and then click on "SAVE".

- ➢ Retrieving Images from your File
  - Click on the area of your Web page that you want to place a graphic.
  - Then, on the INSERT toolbar, click on "PICTURE" (hold down) and then click on "FROM FILE".
  - From your files, highlight the saved graphic you would like to use and then click on "INSERT".

SECTION IV: HYPERLINKS ON A WEB PAGE

- ➢ Creating a Hyperlink to connect to other Web sites
  - Choose a word or words in your Web page that you would like users to click in order to take them to a location on the Internet. For example, if you want users to be able to connect to the OCPS Student Development Benchmarks on the Internet, then follow these instructions.
  - Highlight the words OCPS Benchmarks on your Web page, next select "INSERT" from the menu. Click on "HYPERLINK" and type in the Web site address exactly as it appears below in the Web page box: http://www.ocps.k12.fl.us/framework/subject.php?subject=18
  - Then, click on "OK" and the hyper-linked word or phrase will be in a different color to indicate that the hyperlink was successful.

- ➢ Creating a Hyperlink to a bookmark within the same Web page
  - Place the cursor at the location you would like to bookmark and click on "INSERT" from the menu.
  - Then click on "BOOKMARK" and type in the name of the bookmark (the name can not have any spaces).
  - Click on "ADD" and scroll through your Web page to find the word or words that you would like to hyperlink to your bookmark.
  - Highlight the word/or words and then select "INSERT" from the menu and click on "HYPERLINK" Now, click on "BOOKMARK" and highlight the word that you chose as your bookmark.
  - Then click on "OK" and your hyperlink will be seen in a different color to indicate the hyperlink was successful.

SECTION V: CHALLENGE ACTIVITY

Your challenge and/or homework assignment for the next week is to polish up your guidance Web page and save all your changes onto your disk. Then turn your disk in to your school's technology coordinator. That person can upload your new Guidance Web page and link it to your school's existing Web site. Congratulations, you have created your own Guidance Web page!

COMPUTER TOPIC FOUR: CREATING POWER POINT PRESENTATIONS

SECTION I: WHY SHOULD SCHOOL COUNSELORS CREATE POWER POINT PRESENTATIONS?

Power Point is a tool that can help to enhance instruction and engage students, parents, and faculty members. Power Point presentations can help school counselors explain information in a creative and informative manner to small or large groups. School counselors can utilize this technology to present information at faculty meetings, classroom guidance units, or school-wide events. More specifically, school counselors can use Power Point for the following:

- **Engage students** through counseling interventions. Power Point presentations are media-enhanced ways to pass information to an audience using audio and visuals. For instance, a counselor might show a Power Point presentation to 5th graders going on to middle school, high school students worried about graduation requirements, or a small group of 3rd graders with behavior concerns. Students watching a presentation with sounds and clipart or pictures of students will have a hard time not paying attention. This type of technology helps to capture the attention of both students and adults.

- Reach a **large audience**. Power Point presentations via a large projection screen allow school counselors to provide information to a large group of people at one time. For example, a counselor might use Power Point to inform an audience filled with parents about FCAT testing, the whole senior class about commencement procedures, or inform the school faculty about the school's new peer mediation program. It is an efficient and effective way for a counselor to disseminate information in an organized manner.

- **Provide links** to valuable tools for further information. Power Point allows school counselors the ability to connect Internet links within a presentation. For example, a Power Point presentation about parenting tips can include hyperlinks to Internet sites that can be resources for parents. Another example can include a Power Point presentation to teachers about classroom management techniques. Within the presentation can be links and Web sites to address such a problem and offer helpful resources.

- **Share information** with others. Counselors can e-mail Power Point presentations to each other and thereby save on the time and effort in creating them. For instance, one counselor can design a presentation for teachers on helping them to modify the curriculum for students with Individual Education Plans (IEP) and then e-mail it to another counselor in another school. The receiving counselor can then alter and modify the presentation to fit their school's needs.

SECTION II. NOTES FROM POWER POINT TUTORIAL

Welcome to Power Point, to create your own slide show all you need is an idea and some imagination. The following steps will help guide you through the process.

1. STARTING POWER POINT
    - Turn on computer
    - Double click on the "Power Point" icon
    - Click on "NEW" from the File Menu
    - Double click on "BLANK PRESENTATION"
    - You are now on your first slide
    - Look at the bottom left corner above the "draw" sign. Click on the far left box.
    - You can work in "slide view" or "normal view"

2. LAYOUT
    - Pick a layout from the choices of template layouts by selecting "AUTOLAYOUT"
    - Click on "FORMAT" and go down to "COLOR SCHEME"
    - Pick a color scheme or customize your own
    - Click on "CUSTOMIZE" and select your background, text, and fill colors
    - You can also use a standard background by selecting "APPLY DESIGN"
    - Choosing from "APPLY DEISGN" means the colors and format is already done for you on a template

3. TITLE CREATION
    - Your slide needs a title. Create a title by clicking on the text box and typing inside the space
    - You can adjust the font and size by clicking on the arrows that are next to the font type and size
    - You can also make your words **BOLD** , *Italics*, or Underlined. All you have to do is highlight the word and click on the **B**, *I* or U in the above tool bar.

4. WORDART
    - You can also use WORDART to design a different style to your text.
    - Look at the bottom of the screen. You will see the word "AUTOSHAPES".
    - Click on the slanted letter A to the right of "AUTOSHAPTES"
    - This will open the "WORDART GALLERY"
    - Choose by clicking on a wordart style that you would like your text to resemble
    - Click "OK" and type in your text
    - After typing in your text, click "OK" and it should format into your wordart style

5. TEXT MANIPULATION
    - You can also move, resize, or twist your text and graphics
    - Click on the object or words that you want to change so you get little square boxes surrounding it

- Use your mouse and click on one of the surrounding boxes and drag to resize or move the object
- To twist your object, click on the little circular arrow at the bottom left of your screen
- Once you chick on the circular arrow, green dots will surrounding your object
- Click on one of the dots and move your mouse
- This will enable you to twist the graphic or text into the position you desire

6. ANIMATION
   - Animation can give your Power Point slide show some life
   - Choose "SLIDESHOW" from the above tool bar and click on "CUSTOM ANIMATION"
   - Go to the "ORDER AND TIMING" folder
   - Check the boxes to animate slide objects (including text and graphics)
   - This will give you the order you want them to appear on your slide
   - Click on the "EFFECTS" folder
   - The effects folder is where you go to select the transitions for entry of objects, text, and graphics
   - Choose from several effect styles for each item (try swivel, spiral, and zoom)
   - Sounds can be added here the same way
   - Choose "BY LETTER" or "BY WORD" if you want transition movement per letter or per word

7. VIEWS AND ORGANIZATION
   - At the bottom left of the screen you will find the slide views
   - There are four small boxes with "OUTLINE VIEW", "SLIDE VIEW", "SLIDE SORTER VIEW", and "SLIDE SHOW." Click on each to see the different views available to you
   - The "OUTLINE VIEW" shows the slide show in an outline format with side notes
   - The "SLIDE VIEW" shows an individual full-size slide
   - The "SLIDE SORTER VIEW" shows all created slides in order. This view enables the user to move around slides by clicking on one slide and dragging it into another slide's space
   - The "SLIDE SHOW VIEW" actually begins your presentation and shows you the way it currently looks if it was presented with transitions

8. PRINTING
   - When you are ready to print your presentation, click on "PRINT" under the file menu
   - On this page you can do many things. You can print in black/white and select printing for notes or overheads. You can click on all slides or specific slides you want to be printed.
   - The pull down menu allows you to print notes 3 or 6 to a page in color or black/white.

9. FURTHER SUGGESTIONS
    - Experiment with all the options and don't' get frustrated
    - Run through the Power Point online tutorial for additional reviews
    - Have fun tying out all the different transitions and sounds and find the ones that you find the most attractive and effective for your presentations

SECTION III. ACTIVITY

Your activity is to create your own Power Point presentation. Decide what your goals are in providing this presentation and who the audience will be. This presentation can be used with students in a small or large group counseling session, to the school faculty reviewing FCAT procedures, or to parents and community members on the requirements of graduation.

Good luck and have fun!

APPENDIX D
RESEARCH INSTRUMENTS

Attitudes Toward Computer Technologies (ACT):
Created by Delcourt and Kinzie (1990)

A 19-item questionnaire is used to assess perceived usefulness of and comfort/anxiety with computer technologies. This instrument was originally developed for administration to students and professionals in the field of education (Form A). A Likert scale with a 4-point response format is used with descriptors ranging from (1) strongly disagree to (4) strongly agree.

"Comfort/Anxiety"

1. I am confident about my ability to do well in a course that requires me to use computer technologies.
2. I feel at ease learning about computer technologies.
3. I am not the type to do well with computer technologies.
4. The thought of using computer technologies frightens me.
5. Computer technologies are confusing to me.
6. I do not feel threatened by the impact of computer technologies.
7. I am anxious about computers because I don't know what to do if something goes wrong.
8. I feel comfortable about my ability to work with computer technologies.

"Usefulness"

9. I don't have any use for computer technologies on a day-to-day basis.
10. Using computer technologies to communicate with others over a computer network can help me to be more effective in my job.
11. Using computer technologies in my job will only mean more work for me.
12. I do not think that computer technologies will be useful for me in my profession.
13. With the use of computer technologies, I can create materials to enhance my performance on the job.
14. If I can use word-processing software, I will be more productive.
15. Anything that computer technologies can be used for, I can do just as well some other way.
16. I could use computer technologies to access many types of information sources for my work.
17. Computer technologies can be used to assist me in organizing my work.
18. I don't see how I can use computer technologies to learn new skills.
19. Knowing how to use computer technologies will not be helpful in my future work.

The School Counselor Computer Competency Scale (SCCCS)

Created by Stacy Van Horn (2002)

This is a 16-item, self-reporting scale to measure the subjects' skills, knowledge, and use regarding e-mail, Internet browsing, Power Point and Web page creation. Questions 1-11use a Likert scale with a 5-point response format, with descriptors ranging from (1) strongly disagree to (5) strongly agree. Questions 12-16 are frequency items and ask subjects to fill in the average number of times a particular computer task was performed.

"Skills"

1. I can create group lists and send the same e-mail to multiple people.
2. I can access at least three counseling related sites on the Internet.
3. I can create slides for a Power Point presentation.
4. I can create a Web page.
5. I can form hyperlinks on a Web page.

"Knowledge"

6. I know how to use a browser to access information on the Internet.
7. I know how to utilize sites on the Internet to helps students and families.
8. I know how to use Power Point to disseminate information to students, faculty, and parents.
9. I know how a Web page can provide information about a school's guidance program.
10. I know how I can use e-mail to get support and feedback from fellow counselors.
11. I can tell others about ways that computer technology can be used in the work of a school counselor.

"Use"

12. The average number of times per week I send a job-related e-mail.
13. The average number of times per week I send e-mail to a group list.
14. The approximate number of times per week I use an Internet browser to search for counseling information.
15. The number of job-related PowerPoint presentations I have created.
16. The number of job-related Web sites I have created.

Self-efficacy Scale- General subscale (SES)

Created by Sherer, Maddux, Mercandante, Prentice-Dunn, Jacobs and Rogers (1982)
A 17-item questionnaire is used to assess a person's general self-efficacy. This scale focuses on willingness to initiate behavior, willingness to expend effort in completing behavior, and persistence in the face of adversity. This scale uses a Likert scale with a 5-point response format with descriptors ranging from (1) strongly disagree to (5) strongly agree.

1. When I make plans, I am certain I can make them work.
2. One of my problems is that I cannot get down to work when I should.
3. If I can't do a job the first time, I keep trying until I can.
4. When I set important goals for myself, I rarely achieve them.
5. I give up on things before completing them.
6. I avoid facing difficulties.
7. If something looks too complicated, I will not even bother to try it.
8. When I have something unpleasant to do, I stick to it until I finish it.
9. When I decide to do something, I go right to work on it.
10. When trying to learn something new, I soon give up when I am not initially successful.
11. When unexpected problems occur, I don't handle them well.
12. I avoid trying to learn new things when they look too difficult for me.
13. Failure just makes me try harder.
14. I feel insecure about my ability to do things.
15. I am a self-reliant person.
16. I give up easily.
17. I do not seem capable of dealing with most problems that come up in life.

Instrument # ____

Please answer the following questions.

Sex: ______ Male ______ Female

Current school level: ______ Elementary ______ Middle ______ High

Years of school counseling experience: ________

State where you received your counseling degree: ___________________

Please indicate the number of times you have performed each of the following tasks.

1. The average number of times per week I send a job-related e-mail. ______
2. The average number of times per week I send e-mail to a group list. ______
3. The approximate number of times per week I use an Internet browser to search for counseling information. ______
4. The number of job-related Power Point presentations I have created. ______
5. The number of job-related Web sites I have created. ______

Please indicate the extent to which you agree or disagree, by circling the number to the right of each sentence. Please respond to all statements.

	Strongly Disagree	Slightly Disagree	Slightly Agree	Strongly Agree
6. I am confident about my ability to do well in a course that requires me to use computer technologies.	1	2	3	4
7. I feel at ease learning about computer technologies.	1	2	3	4
8. I am not the type to do well with computer technologies.	1	2	3	4
9. The thought of using computer technologies frightens me.	1	2	3	4
10. Computer technologies are confusing to me.	1	2	3	4
11. I do not feel threatened by the impact of computer technologies.	1	2	3	4
12. I am anxious about computers because I don't know what to do if something goes wrong.	1	2	3	4

	Strongly Disagree	Slightly Disagree	Slightly Agree	Strongly Agree
13. I feel comfortable about my ability to work with computer technologies.	1	2	3	4
14. I don't have any use for computer technologies on a day-to-day basis.	1	2	3	4
15. Using computer technologies to communicate with others over a computer network can help me to be more effective in my job.	1	2	3	4
16. Using computer technologies in my job will only mean more work for me.	1	2	3	4
17. I do not think that computer technologies will be useful for me in my profession.	1	2	3	4
18. With the use of computer technologies, I can create materials to enhance my performance on the job.	1	2	3	4
19. If I can use word-processing software, I will be more productive.	1	2	3	4
20. Anything that computer technologies can be used for, I can do just as well some other way.	1	2	3	4
21. I could use computer technologies to access many types of information sources for my work.	1	2	3	4
22. Computer technologies can be used to assist me in organizing my work.	1	2	3	4
23. I don't see how I can use computer technologies to learn new skills.	1	2	3	4
24. Knowing how to use computer technologies will not be helpful in my future work.	1	2	3	4

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
25. I can create group lists and send the same e-mail to multiple people.	1	2	3	4	5
26. I can access at least three counseling related sites on the Internet.	1	2	3	4	5
27. I can create slides for a Power Point presentation.	1	2	3	4	5

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
28. I can create a Web page.	1	2	3	4	5
29. I can form hyperlinks on a Web page.	1	2	3	4	5
30. I know how to use a browser to access information on the Internet.	1	2	3	4	5
31. I know how to utilize sites on the Internet to help students and families.	1	2	3	4	5
32. I know how to use Power Point to disseminate information to students, faculty, and parents.	1	2	3	4	5
33. I know how a Web page can provide information about a school's guidance program.	1	2	3	4	5
34. I know how I can use e-mail to get support and feedback from fellow counselors.	1	2	3	4	5
35. I can tell others about ways that computer technology can be used in the work of a school counselor.	1	2	3	4	5
36. When I make plans, I am certain I can make them work.	1	2	3	4	5
37. One of my problems is that I cannot get down to work when I should.	1	2	3	4	5
38. If I can't do a job the first time, I keep trying until I can.	1	2	3	4	5
39. When I set goals for myself, I rarely achieve them.	1	2	3	4	5
40. I give up on things before completing them.	1	2	3	4	5
41. I avoid facing difficulties when possible.	1	2	3	4	5
42. If something looks too complicated, I will not even bother to try it.	1	2	3	4	5
43. When I have something unpleasant to do, I stick to it until I finish it.	1	2	3	4	5

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
44. When I decide to do something, I go right to work on it.	1	2	3	4	5
45. When trying to learn something new, I soon give up when I am not initially successful.	1	2	3	4	5
46. When unexpected problems occur, I don't handle them well.	1	2	3	4	5
47. I avoid trying to learn new things when they look too difficult for me.	1	2	3	4	5
48. Failure just makes me try harder.	1	2	3	4	5
49. I feel insecure about my ability to do things.	1	2	3	4	5
50. I am a self-reliant person.	1	2	3	4	5
51. I give up easily.	1	2	3	4	5
52. I do not seem capable of dealing with most problems that come up in life.	1	2	3	4	5

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BIOGRAPHICAL SKETCH

Stacy Marmarosh Van Horn was born April 28, 1970 in Monticello, New York, the daughter of Marilyn and Jerry Marmarosh. She received her Bachelor of Science and Master of Education degrees in elementary education from the University of Florida Proteach Program in 1992 and 1993, respectively. Stacy enrolled in the Counselor Education Department at the University of Florida and received her Education Specialist degree specializing in School Counseling and Guidance in 1996.

Over the past six years, Stacy has served as a school guidance counselor in Orange County, Florida. She has experienced working with students in both elementary and middle schools. She is a Florida Certified School Counselor and National Board Certified Counselor. Stacy is a member of the American Counseling Association, American School Counseling Association, and Orange County Counseling Association.

Personally, Stacy is happily married and will be celebrating her second wedding anniversary this year. She and her husband are also eager and thrilled about the birth of their first child this coming June.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

R. Myrick

Robert D. Myrick, Chair
Professor of Counselor Education

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Joseph Wittmer

P. Joseph Wittmer
Distinguished Service Professor of
Counselor Education

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Sondra Smith

Sondra Smith Adcock
Assistant Professor of Counselor
Education

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

M. David Miller

M. David Miller
Professor of Educational Psychology

This dissertation was submitted to the Graduate Faculty of the College of Education and to the Graduate School and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

August 2003

John H

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This document has been reviewed and accepted by the student's supervisory committee.

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(when required by college)

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